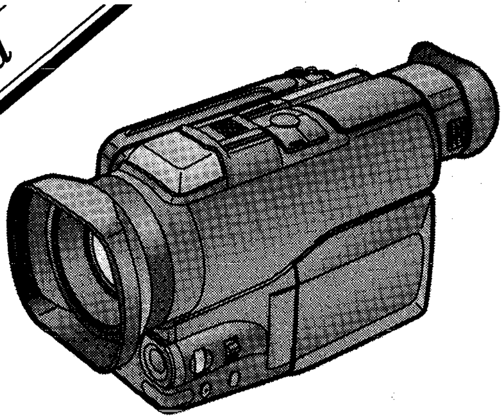
Service Manual

Simplified



Panasonic Mini DV PAL

Digital Video Camera/Recorder

NV-DX110EG/B

DJ-MECHANISM

INTRODUCTION

This service manual contains technical information which will allow service personnel's to understand and service the Mini DV Movie model NV-DX110 series.
This service manual is based on NV-DX100 series.
So, please refer to the descriptions which are shown in
NV-DX100 series Service Manual Order No. : VMD9710040C8

⚠ **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1998 Matsushita Electric Industrial Co., Ltd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

COMPARISON CHART

Comparison Chart for NV-DX110 & NV-DX100
This Chart described different part from the original model to new model as shown below.

Original Model: NV-DX100
New Model: NV-DX110

Note: IMPORTANT NOTICE
Components identified with <!> have special characteristics for safety.
When replacing any these components, use only the same parts.

Comparison Chart: NV-DX100 & NV-DX110

Comparison Chart of Mechanical replacement Parts.

Ref. No.	Parts No. for NV-DX100	Parts No. for NV-DX110	Pcs/ Set	Parts Name & Description	Remarks
14 (1)	VYK8119	**VYK8833**	1	SIDE CASE R (2) U.	
17 (1)	VYK7930	**VYK8411**	1	SIDE CASE L (1) U.	
20 (1)	VYC0788	**VYC0793**	1	GRIP BELT U.	
126 (2)	F05KM100P	**F05KM100Q**	1	LCD	
166 (2)	VGQ4776	**VGQ4731**	1	CAMERA SUB BARRIER	
<!> 201 (3)	DCX501AKB7	**DCX501BK7**	1	LCD PANEL	
213 (3)	VYK8103	**VYK8834**	1	LCD TOP CASE U.	
503 (7)	VPK2019	**VPK2222**	1	PACKING	NV-DX110EG
	VPK2020	**VPK2221**	1		NV-DX110B
<!> 504 (7)	VQT7229	**VQT7833**	1	OPERATING INSTRUCTIONS (GERMAN, ENGLISH, FRENCH, SPANISH)	NV-DX110EG
	VQT7230	**VQT7834**	1	OPERATING INSTRUCTIONS (ITALIAN, DUTCH, SWEDISH, DANISH)	NV-DX110EG
	VQT7231	**VQT7832**	1	OPERATING INSTRUCTIONS (ENGLISH)	NV-DX110B
<!> 505 (7)	VJA0998	**VJA0998**	1	AC CORD	NV-DX110EG
	VJA0940	**VJA0940**	1		NV-DX110B

Comparison Chart: NV-DX100 & NV-DX110

Comparison Chart of Electrical replacement Parts.

Ref. No.	Parts No. for NV-DX100	Parts No. for NV-DX110	Pcs/ Set	Parts Name & Description	Remarks
	VEP03E52A	**VEP03E52B**	1	VTR MAIN C.B.A.	
IC2001	M31020MA107	**M31020MA137**	1		
R2043	ERJ2GEJ473	**ERJ2GEJ102**	1		

Service Manual

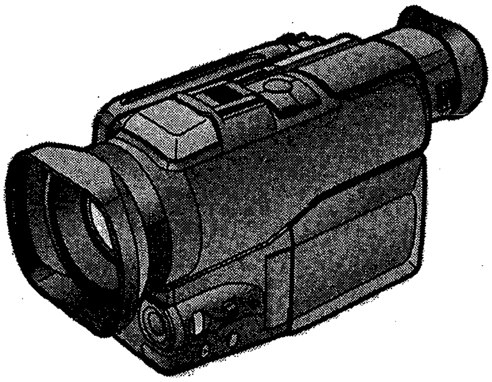
General Description
Adjustment Procedures
Block / Schematic Diagrams
Exploded Views / Parts List

Panasonic Mini DV PAL

Digital Video Camera/Recorder

NV-DX100 EG/B EN/ENA

DJ-MECHANISM



SPECIFICATIONS

ITEM	SPECIFICATION
POWER	Source: Battery Pack; 7.2 V DC AC Adaptor; 7.9 V DC Consumption: During Camera Recording Using The LCD; 7.9 W During Camera Recording Using The Viewfinder; 6.7 W
RECORDING FORMAT	Digital Video SD Format
TAPE FORMAT	Mini DV Cassette Tape (Tape width 6.35 mm)
TAPE SPEED	SP mode: 18.812 mm/s LP mode: 12.555 mm/s Record/Playback Time SP mode: 60 min. with DVM60 LP mode: 90 min. with DVM60
CAMERA	PICK-UP ELEMENT: CCD (Charge Coupled Device)
	STANDARD ILLUMINATION: 1,400 lux
	MINIMUM REQUIRED ILLUMINATION: 8 Lux
	LENS: 12 : 1 Wide-angle Power Zoom Lens (Optical capability) F1.6 Focal Length: 4.16−47.66 mm Digital AI, Auto Focus/Auto Iris Filter Diameter: 43.0 mm
	IMAGE SENSOR: 1/4 inch CCD Image Sensor ×3 (RGB)
	VIEWFINDER: 0.5 inch Colour Electronic Viewfinder 2.5-inch Colour LCD Monitor
VIDEO	RECORDING FORMAT: Digital Component
	TELEVISION SYSTEM: CCIR; 625 Lines, 50 Fields PAL Colour Signal

ITEM	SPECIFICATION
VIDEO	VIDEO OUTPUT LEVEL: 1.0 Vp-p, 75Ω S-VIDEO OUTPUT LEVEL; Y: 1.0 Vp-p 75Ω C: 0.3 Vp-p 75Ω
AUDIO	RECORDING FORMAT: Digital PCM Stereo; 16 bit (48 kHz/2 ch) 12 bit (32 kHz/4 ch)
	OUTPUT LEVEL: 316 mV, 600Ω
DIGITAL STILL PICTURE	Digital Still Picture Output, Control Signal Input/Output (Transfer rate: max. 115 kbps)
DIGITAL INTERFACE	DV Output Terminals (Compliant with IEEE 1394, 4-pin)
OPERATING TEMPERATURE	0 ~ 40°C
OPERATING HUMIDITY	0 ~ 80%
WEIGHT	Approx. 690 g (without Battery Pack)
DIMENSIONS	Approx. 80 (W)×105 (H)×192 (D) mm
STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack 1 pc. S-VIDEO Cable 1 pc. Shoulder Belt 1 pc. DC Input Cable 1 pc. AC Cable 1 pc. AV Cable 1 pc. Remote Controller 1 pc. Battery for Remote Controller 1 pc. Output Terminal Box 1 pc. Shoulder Strap 1 pc. 21 pin Adaptor (Except NV-DX100EN/ENA) 1 pc. Cassette Tape (NV-DX100EN/ENA Only)

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

© 1997 Matsushita Electric Industrial Co., Ltd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

⚠ **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

INTRODUCTION 1

This service manual contains technical information which will allow service personnel's to understand and service this model.

Section 1 Presents you with some general information of features and controls, enabling you to become familiar with each function.

Section 2 Contributes to your electrical adjustment as well disassemble and replacement procedures.

Section 3 Contain block diagrams which offers you information for checking and understanding each circuit.
Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c..

Section 4 Contain exploded views and parts list.

Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

Note 1 :Adjustment procedure for Mechanism-Chassis is separate volume.
Please refer to following manual for detail of adjustment procedure for Mechanism-Chassis.

DJ Mechanism Chasis : VMD9706005A8

Note 2 : The Electric adjustment is supported only by TATSUJIN software which is uploaded on item 13 of CS-Net in Pana-Van.
Please download applicable software from CS-Net and use it.
(You can make copies freely.)

Note 3 :This Digital Video Camera uses VW-AD3E as NV-DS1/DS5.
Also Output Terminal Box used VSK0499 as NV-DS1/DS5.
Please refer to Service manual of NV-DS1/DS5 for Details of AC adapter and Output Teminal Box.

CONTENTS

SERVICE INFORMATION 1

SECTION 1 GENERAL DESCRIPTIONS 1-1

SECTION 2 ADJUSTMENT PROCEDURES 2-1

2-1. DISASSEMBLY FLOW CHART 2-1

2-2. DISASSEMBLY PROCEDURES 2-2

SECTION 3 BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS 3-1

3-1. ABBREVIATIONS 3-1

3-2. OVERALL BLOCK DIAGRAM 3-7

3-3. EVF & LCD MONITOR BLOCK DIAGRAM 3-8

3-4. CCD DRIVE BLOCK DIAGRAM 3-10

3-5. PROCESS BLOCK DIAGRAM 3-14

3-6. SYSTEM CONTROL & SERVO BLOCK DIAGRAM 3-18

3-7. VIDEO BLOCK DIAGRAM 3-22

3-8. AUDIO BLOCK DIAGRAM 3-24

3-9. INTERCONNECTION SCHEMATIC DIAGRAM 3-26

3-10. SENSOR SCHEMATIC DIAGRAM 3-28

3-11. PROCESS & CAMERA OPERATION SCHEMATIC DIAGRAM 3-30

3-12. LENS DRIVE SCHEMATIC DIAGRAM 3-36

3-13. ANALOG PRE PROCESS & AWT SENSOR SCHEMATIC DIAGRAM 3-38

3-14. TOP OPERATION SCHEMATIC DIAGRAM 3-43

3-15. REAR OPERATION SCHEMATIC DIAGRAM 3-43

3-16. HEAD AMP SCHEMATIC DIAGRAM 3-44

3-17. DRIVE SCHEMATIC DIAGRAM 3-46

3-18. POWER SCHEMATIC DIAGRAM 3-48

3-19. VTR MAIN CONNECTION SCHEMATIC DIAGRAM 3-50

3-20. SYSTEM CONTROL & SERVO SCHEMATIC DIAGRAM 3-54

3-21. VIDEO1 SCHEMATIC DIAGRAM 3-64

3-22. VIDEO2 SCHEMATIC DIAGRAM 3-70

3-23. LCD SCHEMATIC DIAGRAM 3-74

3-24. DIGITAL I/F SCHEMATIC DIAGRAM 3-76

3-25. AUDIO SCHEMATIC DIAGRAM 3-77

3-26. SOUND TITLE SCHEMATIC DIAGRAM 3-78

3-27. LCD I/F SCHEMATIC DIAGRAM 3-79

3-28. FRONT & MF RING SCHEMATIC DIAGRAM 3-80

3-29. E.V.F. (A) & E.V.F. (B) SCHEMATIC DIAGRAM 3-82

3-30. MONITOR & HALL SENSOR SCHEMATIC DIAGRAM 3-84

3-31. TOP OPERATION C.B.A. 3-86

3-32. FRONT C.B.A. 3-87

3-33. CAMERA MAIN [Process , Camera Operation Section] C.B.A. 3-88

3-34. AWT SENSOR C.B.A. 3-90

3-35. CAMERA SUB [Sensor , Analog Pre Process , AWT Sensor Section] C.B.A. 3-91

3-36. MF RING C.B.A. 3-92

3-37. CAMERA OPERATION C.B.A. 3-93

3-38. VTR MAIN [VTR Main Connection , System Control & Servo , Video1 , Video2 , LCD ,Digital I/F , Audio , Sound Title Section] C.B.A. 3-94

3-39. POWER C.B.A. 3-101

3-40. REAR OPERATION C.B.A. 3-103

3-41. HEAD AMP C.B.A. 3-104

3-42. DRIVE C.B.A. 3-105

3-43. LCD I/F C.B.A. 3-106

3-44. MONITOR C.B.A. 3-107

3-45. HALL SENSOR C.B.A. 3-107

3-46. E.V.F.(A) C.B.A. 3-108

3-47. E.V.F.(B) C.B.A. 3-108

SECTION 4 EXPLODED VIEWS & PARTS LIST 4-1

EXPLODED VIEWS & MECHANICAL REPLACEMENT PARTS LIST 4-1

1. FRAME & CASING PARTS SECTION (1) 4-1
2. FRAME & CASING PARTS SECTION (2) 4-3
3. LCD PARTS SECTION 4-5
4. CAMERA LENS SECTION 4-6
5. VCR MECHANISM SECTION(1) 4-7
6. VCR MECHANISM SECTION(2) 4-8
7. PACKING PARTS & ACCESSORIES SECTION 4-9

4-2. ELECTRICAL REPLACEMENT PARTS LIST 4-11

INTRODUCTION

Caution for AC CORD (VJA0940 type)

Information for Your Safety

IMPORTANT
YOUR ATTENTION IS DRAWN TO THE FACT THAT RECORDING OF PRE-RECORDED TAPES OR DISCS OR OTHER PUBLISHED OR BROADCAST MATERIAL MAY INFRINGE COPYRIGHT LAWS.

WARNING
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FOR YOUR SAFETY
■ DO NOT REMOVE THE OUTER COVER.
To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

Caution for AC Mains Lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ◈ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFETY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.

■ IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

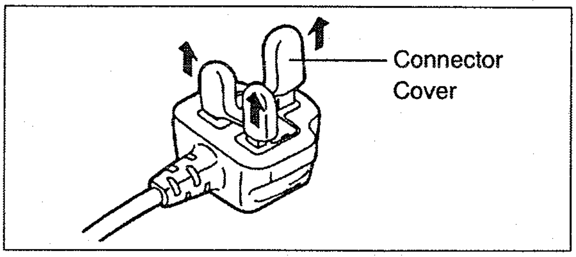
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚ .

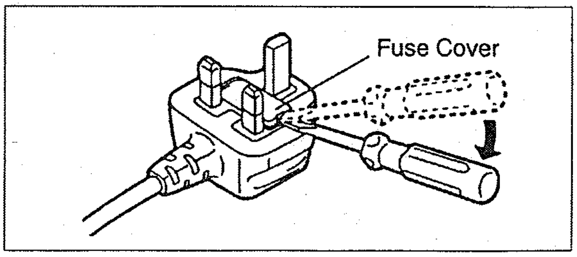
■ Before use

Remove the Connector Cover as follows.

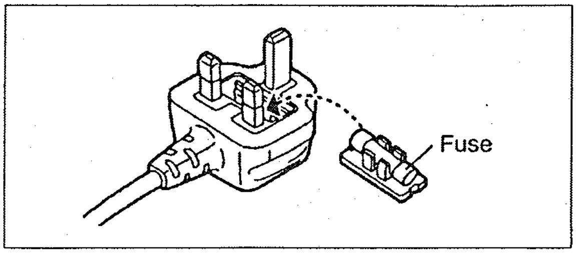


■ How to replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.

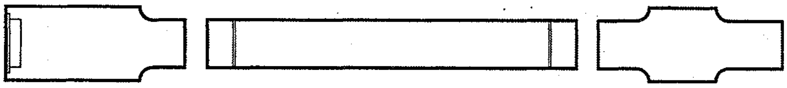
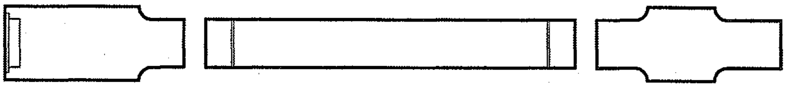


Service Information

1. Service Extension Cables

No.	Parts No.	Pin	Parts Name	Connection	Q'ty	Remarks
①	VFK1389	26	Flat Cable	CCD-CAM Sub PP101	1	
②-1	VFK1311	80	Flat Cable	CAM Main PP301-VTR Main PS3002	1	
②-2	VFK1311	80	Flat Cable	Power PP1001-VTR Main PS1001	1	
③	VFK1387	30	Flat Cable	CAM Main PP302-VTR Main PS3001	1	
④	VFK1388	12	Flat Cable	CAM Main FP305-CAM-Operation	1	
⑤	VFK1367	50	Flat Cable	VTR Main PP2001-Drive PS2001	1	
⑥	VFK1176	13	Flat Cable	VTR Main FP4001-Front FP4801	1	
⑦	VFK1286	16	Flat Cable	VTR Main FP6002-REAR-OP FP6701	1	
⑧	VFK1173	14	Flat Cable	Power FP1001-Battery	1	
⑨	VFK1282	22	Flat Cable	CAM Main FP701-Lens Drive	1	
⑩	VFK1284	24	Flat Cable	VTR Main FP3201-Mecha H-Rec Amp	1	
⑪	VFK1365	70	Flat Cable	VTR Main PP3002-LCD I/F PS3502	1	
⑫-1	VFK1175	16	Flat Cable	LCD I/F FP3503-Monitor (A) FP904	1	
⑫-2	VFK1175	16	Flat Cable	LCD I/F FP3502-Monitor (B) FP903	1	
⑬	VFKW0F0112 VFKW0F0001 VFKW0F0111	18 28 18	Attachment Cable Common Cable Attachment Cable	LCD I/F FP3501-EVF (B) FP801	1 1 1	Refer to next page.
⑭	VFKW0F0186 VFKW0F0001 VFKW0F0187	8 28 8	Attachment Cable Common Cable Attachment Cable	AWT Sensor FP401-CAM Sub Flex	1 1 1	Refer to next page.
⑮	VFK1173	14	Flat Cable	VTR Main FP6001-TOP OP Flex	1	

Setting for Cable

No.	Setting for Cable
⑬	VFKW0F0111 VFKW0F0001 VFKW0F0112 Connect to FP801  Connect to FP3501
⑭	VFKW0F0187 VFKW0F0001 VFKW0F0186 Connect to CAMERA SUB FLEX.  Connect to FP401

2. Service Position

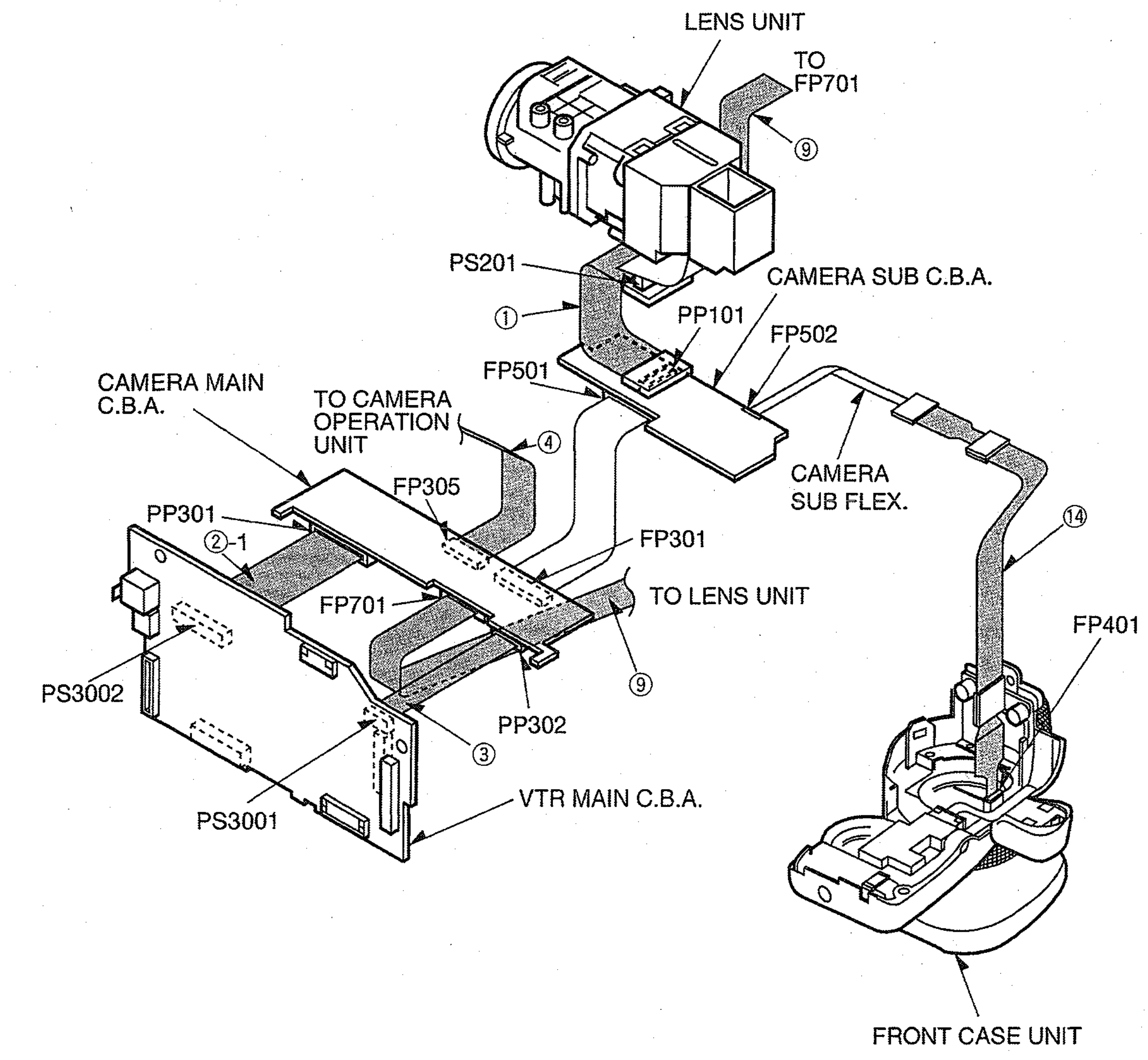

LENS UNIT
TO FP701
⑨
PS201
CAMERA SUB C.B.A.
①
PP101
FP502
FP501
CAMERA MAIN C.B.A.
TO CAMERA OPERATION UNIT
④
CAMERA SUB FLEX.
FP305
PP301
②-1
FP301
⑭
FP701
TO LENS UNIT
FP401
PS3002
⑨
PP302
③
PS3001
VTR MAIN C.B.A.
FRONT CASE UNIT

Fig. 2-1

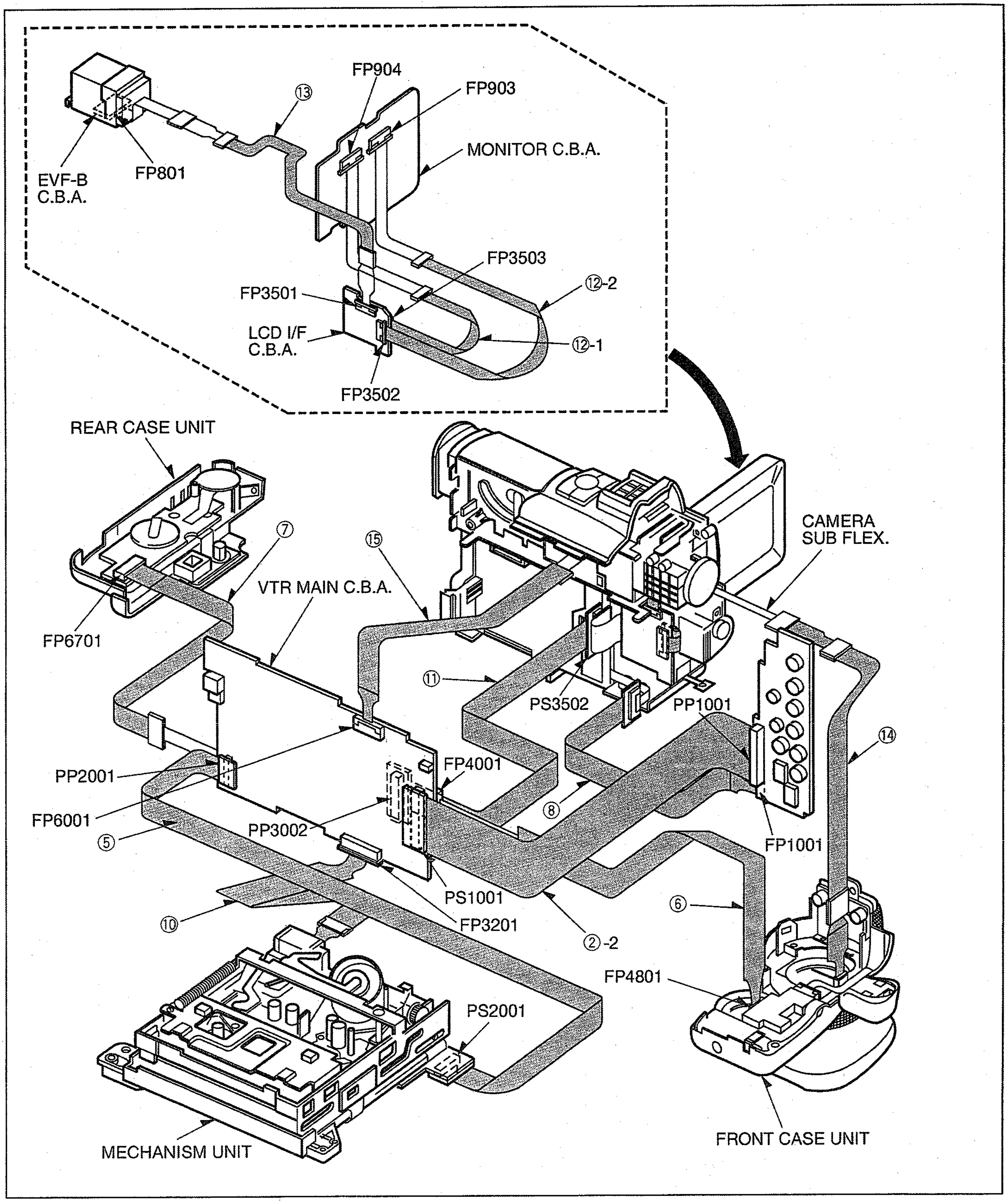

FP904
FP903
⑬
MONITOR C.B.A.
EVF-B C.B.A.
FP801
FP3503
⑫-2
FP3501
LCD I/F C.B.A.
⑫-1
FP3502
REAR CASE UNIT
CAMERA SUB FLEX.
⑦
⑮
VTR MAIN C.B.A.
FP6701
⑪
PS3502
PP1001
⑭
PP2001
FP4001
FP6001
⑧
⑤
PP3002
FP1001
PS1001
⑥
⑩
FP3201
②-2
FP4801
PS2001
MECHANISM UNIT
FRONT CASE UNIT

Fig. 2-2

3. Preparation for Electrical Adjustment

Remove Screw and EVR Connector Cover which is located on the bottom side of the unit as follows.

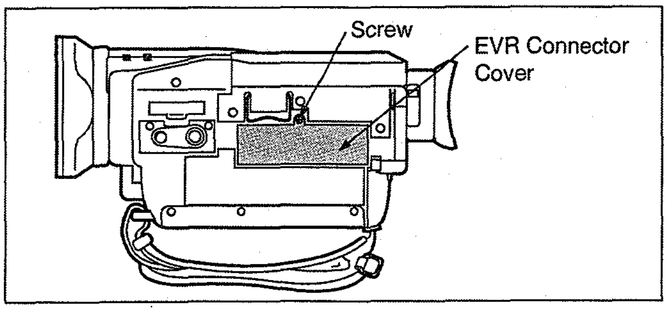

Screw
EVR Connector Cover

Fig. E1

Then connect the following cables as shown in Fig. E2.

Part No.	Part Name	Q'ty	Remarks
VFK1395	232C (M3) I/F CABLE	1	
VFK1308E	MEASURING BOARD	1	
VFK1309	EVR CONNECTOR BOARD	1	
VFK1317	30 PIN FLAT CABLE	2	
VJA0941	DC OUTPUT CABLE	1	For AC Adapter
VFK1164TAR43	STEP UP RING (ϕ43.0 mm)	1	For Collimator

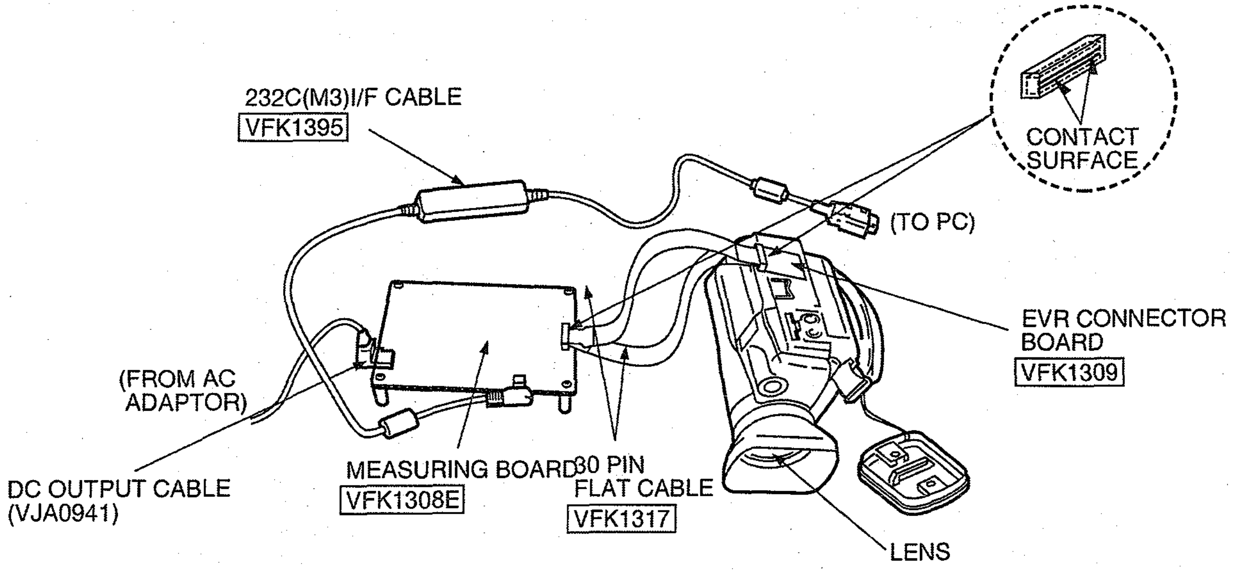

232C(M3)I/F CABLE
VFK1395
CONTACT SURFACE
(TO PC)
EVR CONNECTOR BOARD
VFK1309
(FROM AC ADAPTOR)
DC OUTPUT CABLE (VJA0941)
MEASURING BOARD
VFK1308E
30 PIN FLAT CABLE
VFK1317
LENS

Fig. E2

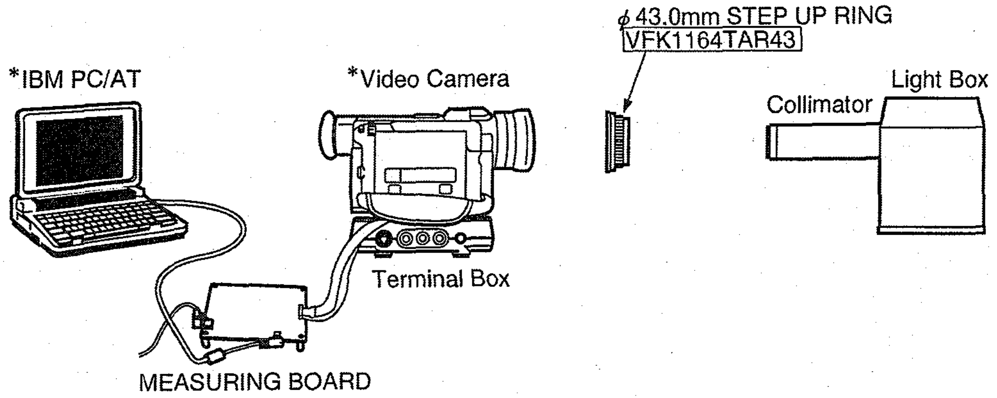
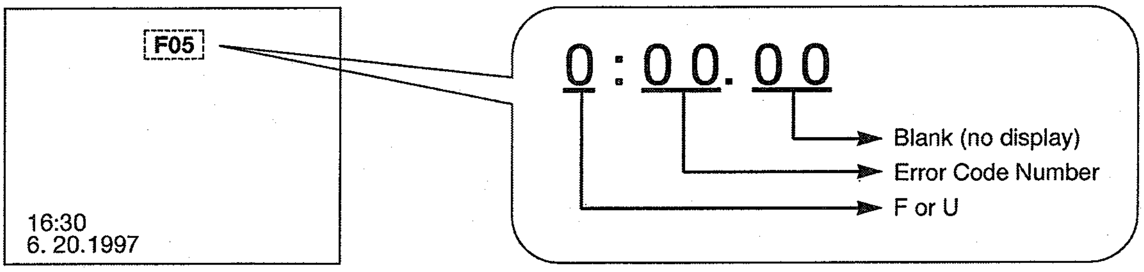

*IBM PC/AT
*Video Camera
ϕ43.0mm STEP UP RING
VFK1164TAR43
Light Box
Collimator
Terminal Box
MEASURING BOARD

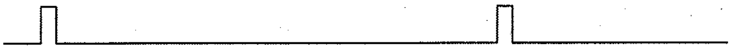
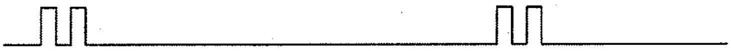
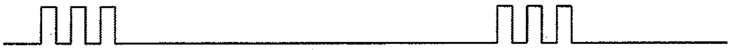
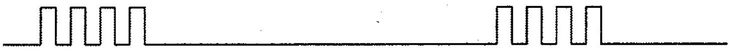
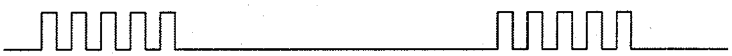
Fig. E3

4. Service Mode

When undesirable conditions occurred, the error code is displayed on the E.V.F. or LCD Monitor.
Also, the Camera LED is flashed according to the error code as follows.



E.V.F. or LCD Monitor

DISPLAY	CONDITION	POWER OFF TIMING / POWER LED FLASHING TIMING
F01	T-Reel Lock	After 1 minute flashing the LED 
F02	S-Reel Lock	After 1 minute flashing the LED 
F03	Unloading Lock	After 1 minute flashing the LED 
F04	Loading Lock	After 1 minute flashing the LED 
F05	Cylinder Lock	After 1 minute flashing the LED 
F31	Data Transmission Error	Not turning OFF
F51	Focus Motor Lock	Not turning OFF Power LED is flashed at 1 Hz timing
F52	Zoom Motor Lock	Not turning OFF Power LED is flashed at 1 Hz timing
U10	Dew Detection	After 18 seconds flashing the LED Power LED is flashed at 1 Hz timing
U11	Head Clogging	Not turning OFF

5. HOW TO REPLACE THE LITHIUM BATTERY
(PROCEDURE)

1. Remove the Rear Operation C.B.A. from Rear Case. (Refer to Disassembly Procedures)
2. Unsolder the Lithium battery "VL2020/1HF" and then replace the new one. (See Fig. B1)

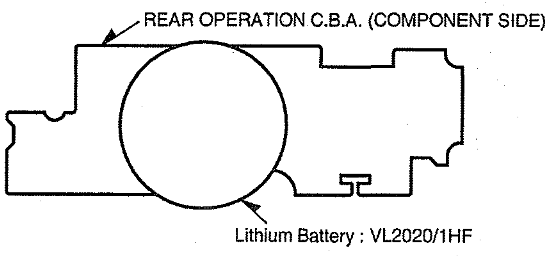

REAR OPERATION C.B.A. (COMPONENT SIDE)
Lithium Battery : VL2020/1HF

Fig. B1

NOTE:

The lithium battery is a critical component (Type No.: VL2020/1HF Manufactured by Panasonic.)
It must never be subjected to excessive heat or discharge.
It must therefore only be fitted in equipment designed specifically for its use.
Replacement batteries must be of the same type and manufacture.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposed of in waste products destined for burial rather than incineration.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

VARNING

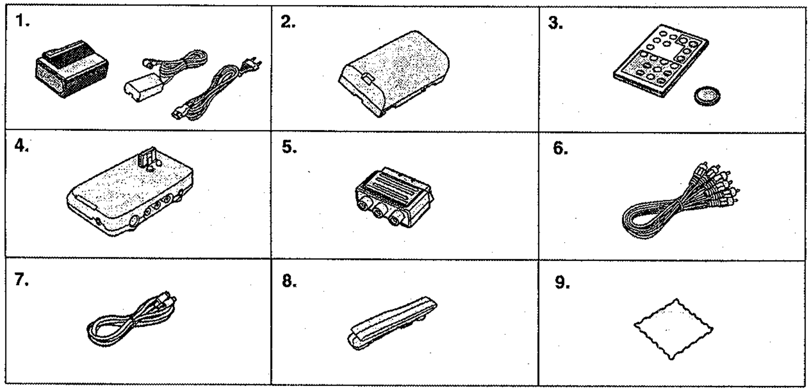
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

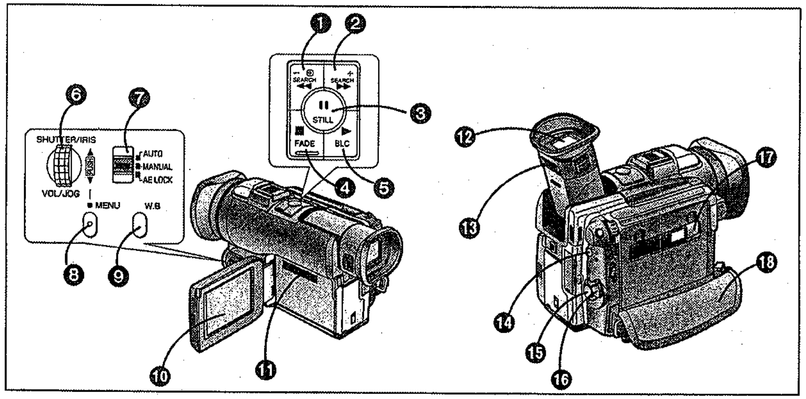
VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.



Standard Accessories

1. **AC Adaptor (→ 16, 18)**
   To supply power to the Movie Camera.
   To charge the Battery.
   DC Input Cable and AC Mains Cable (→ 16, 18)
   To connect the AC Adaptor to the Movie Camera and to an AC mains socket.
2. **Battery Pack (→ 18)**
   To supply the Movie Camera with power.
3. **Remote Controller and Button-Type Battery (→ 100, 106)**
4. **Output Terminal Box [AV ONE TOUCH STATION] (→ 54, 56, 110)**
   Equipped with AV Sockets, Edit Socket, Digital Still Picture Terminal, and Headphone Socket.
5. **21-pin Adaptor (→ 54, 112, 114, 116)**
6. **AV Cable (→ 54, 112, 114, 116)**
7. **S-Video Cable (→ 54, 112, 114, 116)**
8. **Shoulder Strap (→ 28)**
9. **Cleaning Tissue**
   To clean the Lens and the LCD Monitor.



Controls and Components

① **Reverse Search Button / Rewind/Review Button / Recording Check Button [◀◀] (→ 32, 46, 48, 58)**

② **Forward Search Button / Fast Forward/ Cue Button [▶▶] (→ 48, 58)**

③ **Still Button / Pause Button [❚❚] (→ 44, 52)**

④ **Fade Button / Stop Button [■] (→ 46, 68)**

⑤ **Backlight Button / Play Button [▶] (→ 32, 46)**

⑥ **Multi-Function [PUSH] Dial (→ 42, 44, 46, 52, 60, 70, 76, 86, 88, 126, 134, 138)**

⑦ **Mode Selector Switch [AUTO / MANUAL / AE LOCK] (→ 30, 36, 70, 82, 84, 86, 88, 90)**

⑧ **Menu Button [MENU] (→ 42, 44, 60, 70, 76, 78, 80, 126, 134)**

⑨ **White Balance Button [W.B] (→ 82, 84)**

⑩ **LCD Monitor (→ 26)**

⑪ **Speaker (→ 46)**

⑫ **Finder (→ 26)**

⑬ **Eyepiece Corrector Knob (→ 26)**

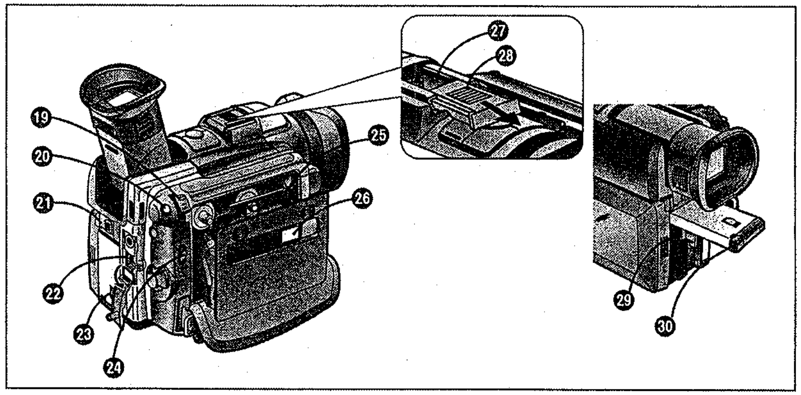
⑭ **VCR (Playback) Mode / Camera (Recording) Mode Button (and Lamps) (→ 30, 46)**

⑮ **Recording Start/Stop Button (→ 30)**

⑯ **Power Switch [POWER ON/OFF] (→ 26, 30)**

⑰ **Cassette Compartment Lock Button [△ LOCK] (→ 22)**

⑱ **Grip Belt (→ 28)**



⑲ **Zoom Lever [W/T] (→ 38)**

⑳ **Photoshot Button [PHOTO SHOT] (→ 40)**

㉑ **LCD Monitor Open Lever [PUSH OPEN] (→ 26)**

㉒ **DV Terminal [DV]**
To output digital signals.
Connect it to digital video equipment with IEEE1394-compatible DV input terminal.
♦This terminal cannot be used to input digital signals into this Movie Camera.

㉓ **Battery Compartment Cover Open Lever [BATTERY] (→ 18)**

㉔ **Cassette Eject Button [▲ EJECT] (→ 22)**

㉕ **Cassette Compartment (→ 22)**

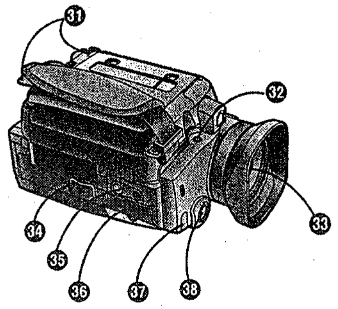
㉖ **Cassette Compartment Window (→ 22)**

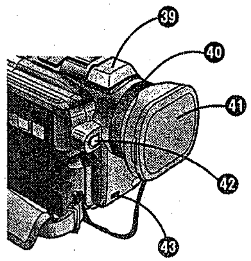
㉗ **Accessory Shoe**
To attach the Stereo Zoom Microphone (optional).

㉘ **Shoe Cover**
When using the Shoe, remove the Shoe Cover by sliding it in the direction of the arrow.

㉙ **Battery Eject Lever (→ 18)**

㉚ **Cover for DC Input Cable Slot (→ 16)**





㉛ **Shoulder Strap Holders (→ 28)**

㉜ **Microphone Socket [MIC]**

To connect an external microphone or audio equipment. (Connecting to this socket deactivates the built-in microphone.)

Socket:	M3-type
Impedance:	Less than 4.7 kohm
Type:	Stereo (When connecting a mono microphone, no sound is recorded on the right channel.)
Sensitivity:	Approx. –70 dB
Power Source for Microphone:	Unnecessary

㉝ **Lens**

㉞ **Support Leg (→ 46)**

㉟ **Tripod Receptacle**

To mount the Movie Camera on an optional tripod.

㊱ **Multi Terminal [MULTI] (→ 54, 56, 110)**

㊲ **Remote Control Sensor (→ 108)**

㊳ **Focus Button [FOCUS] (→ 36)**

㊴ **Microphone (built-in, stereo)**

㊵ **Manual Focus Ring**

㊶ **Lens Cap (→ 56, 84)**

㊷ **White Balance Sensor (→ 158)**

㊸ **Recording Lamp (→ 30)**

The 3 Types of Power Supplies

1) AC Adaptor (supplied) to supply power from an AC mains socket
2) Car Battery Charger (optional) to supply power from a Cigarette Lighter Socket
3) Battery (supplied) (→ 18)

■ Supplying Power from an AC Mains Socket

1 Slide the [BATTERY] Lever upward to open the Battery Compartment Cover.

2 Insert the battery-shaped connector of the DC Input Cable ❶ into the Movie Camera.

Pull back the Cover for the DC Input Cable Slot ❷ and lift it. Pass the DC Input Cable through the slot and close the Battery Compartment Cover.

3 Connect the other end of the DC Input Cable to the AC Adaptor.

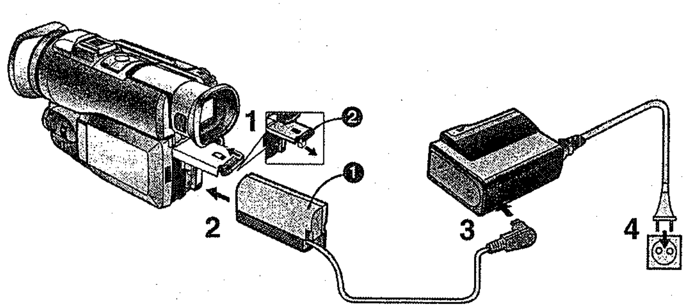
4 Connect the AC Mains Cable to an AC mains socket.

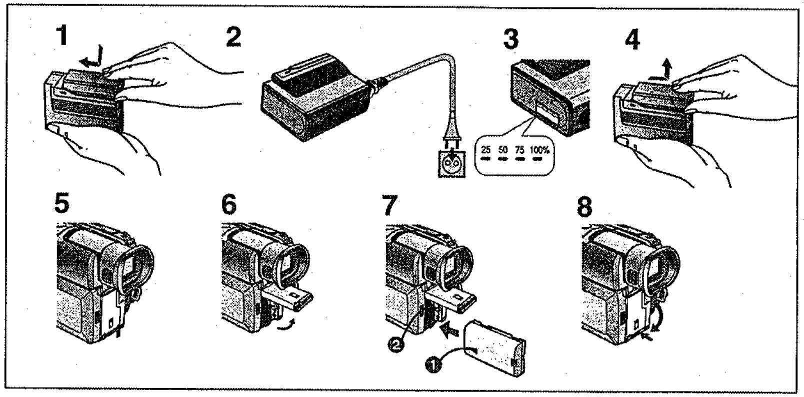
- ♦ Before disconnecting the AC Mains Cable, set the [POWER ON/OFF] Switch to [OFF].
- ♦ **If you use the Movie Camera for a long time, it becomes warm. However, this is normal.**

■ Supplying Power from the Cigarette Lighter Socket in a Car

You can use the optional Car Battery Charger VW-KBD1E to supply the Movie Camera with power from the Cigarette Lighter Socket in a car.
In addition, you can also use it to charge the Movie Camera's Battery.

- ♦ **After use, be sure to disconnect the Car Battery Charger from the Cigarette Lighter Socket.**
- ♦ Be sure to start the car engine before you connect the Car Battery Charger, otherwise the fuse may blow.
- ♦ Use the DC Input Cable supplied with the Movie Camera for connecting, not the one supplied with the VW-KBD1E.





■ Supplying Power with the Battery

The Battery was only minimally charged before shipping. Therefore, fully charge it before you use it for the first time.

1 Place the Battery on the AC Adaptor as shown above and slide it horizontally until it stops.

2 Connect the AC Mains Cable to the AC Adaptor and an AC mains socket.

3 When all four Charge Lamps on the AC Adaptor are lit, charging is finished.

4 Remove the Battery by sliding it in the opposite direction of Step 1 above.

- Also disconnect the AC Mains Cable.

5 Slide the [BATTERY] Lever.

6 Open the Battery Compartment Cover.

7 Insert the Battery with ❶ pointing inside.

8 Close the Battery Compartment Cover so that it locks with a click.

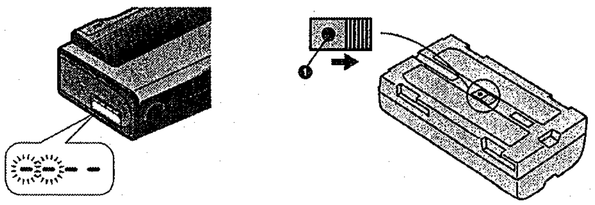
Removing the Battery

Open the Battery Compartment Cover and push the Battery Eject Lever ❷.

- ♦ Hold your hand over the Battery Compartment to prevent the Battery from dropping.
- ♦ Before removing the Battery, set the [POWER ON/OFF] Switch to [OFF].

Caution

Be sure to insert the Battery with the [▲] mark pointing into the Movie Camera. If you insert it with the mark pointing outside, it could damage the Movie Camera.



Charging Time and Maximum Time for Continuous Recording

Battery No.	Charging Time	Max. Continuous Recording Time
Supplied	80 min.	85 min. (70 min.)
VW-VBD1E	80 min.	85 min. (70 min.)
VW-VBD2E	160 min.	160 min. (125 min.)
CGR-B/814	320 min.	360 min. (270 min.)

(The times shown in the above chart are approximations. The figures in parentheses show the recording time when using the LCD Monitor.)
The times listed above for your information indicate the duration of recording performed at an ambient temperature of 20°C and 60% relative humidity. The charging time may be longer when you charge the Battery at higher or lower temperature.

- During use and charging, the Battery becomes warm. The Movie Camera, too, becomes warm during use.
- When you repeatedly stop and restart recording, the recording time per Battery is shorter than listed above.
- If you do not use the Battery for a long time, please read the Precautions for Storage (→ 148).

When the Charge Lamps Flash

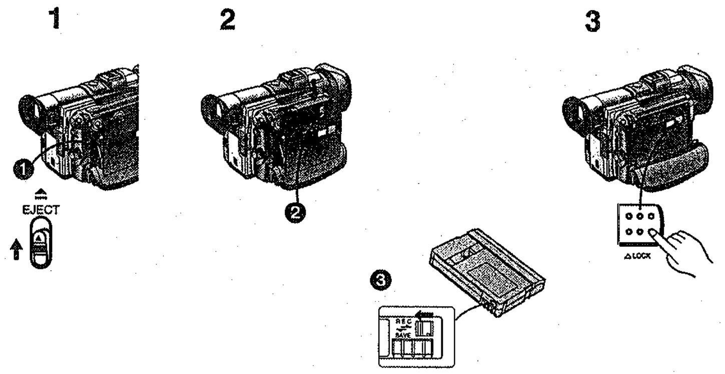
When the internal temperature of the Battery or the ambient temperature is extremely high or low, the Charge Lamps on the AC Adaptor flash.

When the Charge Lamps flash slowly
The Battery is being charged, but charging takes longer than normally.

When the Charge Lamps flash in pairs
Charging is not possible. When the temperature becomes appropriate for charging, the Charge Lamps stop flashing and charging starts.

Using the Charge Confirmation Marker

You can use this marker to easily distinguish between charged and discharged Batteries.
For example, slide the knob so that the red dot (●) ❶ is visible after the charging is completed.



Inserting the Cassette

1 Slide the [≜ EJECT] Lever ❶ upward to open the Cassette Compartment.

2 Insert the cassette.
Insert the cassette with its window in position ❷.

3 Close the Cassette Compartment and press the [△ LOCK] Button to lock the Cassette Compartment.

- If the Movie Camera is supplied with power, above operation step 1 can be operated without turning on the Movie Camera.
- When opening or closing the Cassette Compartment, push down the Grip Belt so that it does not obstruct the opening and closing of the Cassette Compartment. Otherwise the Grip Belt may prevent the Cassette Compartment from opening completely, or it may get caught under the Cassette Compartment Cover and prevent it from closing properly.
- When inserting the cassette, make sure it faces in the right direction and then push in straight down until it stops.
- When you insert a cassette onto which you have recorded before, use the Camera Search Function (→ 58) to search for the position from which you want to continue recording.
- When you insert a new cassette, rewind the tape to the beginning before starting to record.

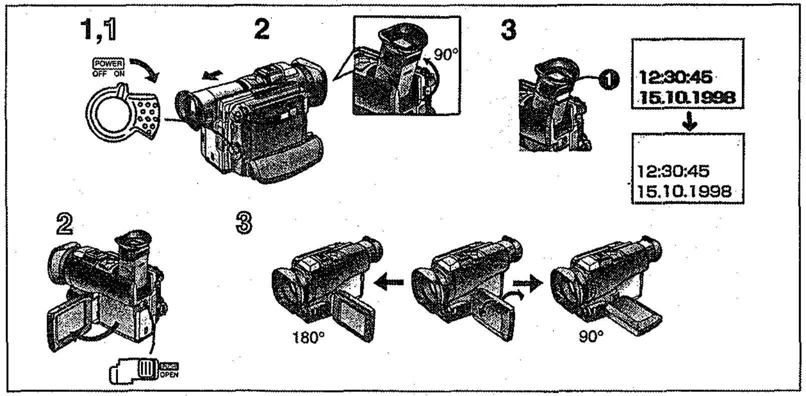
Preventing Accidental Erasure of Recordings
Opening the cassette's erasure prevention slider ❸ (sliding it in the direction of the [SAVE] arrow) prevents recording. To record again, close the erasure prevention slider (slide it in the direction of the [REC] arrow).

■ LP Mode

The desired recording speed can be selected with [REC SPEED] on the Menu. (→ 126-130)

If you select the [LP] Mode, the possible recording time is 1.5 times as long as in the SP Mode.
Recording in the LP mode does not deteriorate the picture quality. However, the playback picture may contain mosaic-like patterns and certain functions may be restricted.

- In the following cases, mosaic-like patterns may appear in the playback picture or the picture may not be played back correctly:
  - When a cassette recorded in the LP Mode on this Movie Camera is played back on other digital video equipment.
  - When a cassette recorded in the LP Mode on other digital video equipment is played back on this Movie Camera.
  - When a cassette recorded in the LP Mode on this Movie Camera is played back on digital video equipment not featuring the LP Mode.
  - In the Slow Motion or Still Advance Playback Mode. (→ 50, 52)
  - When using the Camera Search Function. (→ 58)
- As the recording track width in the LP Mode is smaller than the head width, recording new sound onto an already recorded cassette (audio dubbing) (→ 96) is impossible.



Using the Finder

Before using the Finder, adjust it to your eyesight so that the indications in the Finder are clear and easy to read.

1 Set the [POWER ON/OFF] Switch to [ON].

2 Slide the Finder backward.
The angle of the Finder can be adjusted upward. However, be sure to slide the Finder backward until it stops, before turning it upward.

3 Adjust by sliding the Eyepiece Corrector Knob ①.
You can adjust the brightness of the Finder on the Menu. (→ 126-130, 138)

Using the LCD Monitor

It is also possible to record while viewing the picture on the opened LCD Monitor.

1 Set the [POWER ON/OFF] Switch to [ON].

2 Push the [PUSH OPEN] Lever and turn out the LCD Monitor approximately 90° in the direction of the arrow.
The Finder turns off.

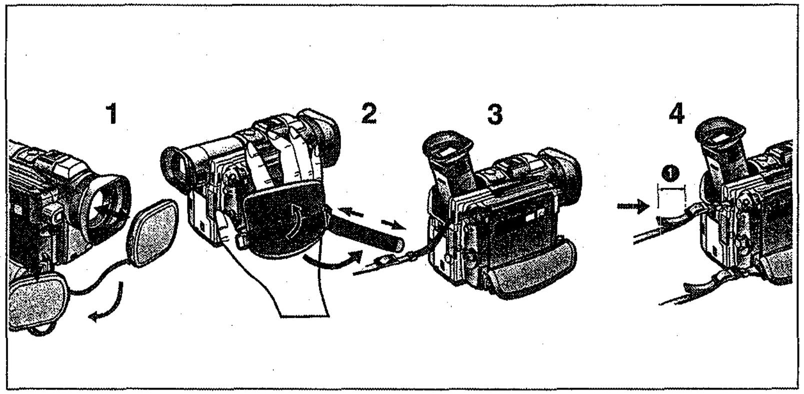
Adjusting the Angle

3 Adjust the angle of the LCD Monitor according to the desired recording angle.

- The LCD Monitor rotates upward a maximum of 180° ② and downward a maximum of 90° ③ from its normal vertical position. Trying to forcefully rotate it beyond this range could seriously damage the Movie Camera.
- You can adjust the colour level and brightness of the LCD Monitor on the Menu. (→ 126-130, 138)

Closing the LCD Monitor

Push the LCD Monitor close until the [PUSH OPEN] Lever locks with a click.



Handling the Lens Cap

Before you start recording, remove the Lens Cap.

1 You can hook the removed Lens Cap onto the Grip Belt.
When not actually recording, attach the Lens Cap to the Lens to protect it.

Adjusting the Grip Belt

You can adjust the Grip Belt to the size of your hand.

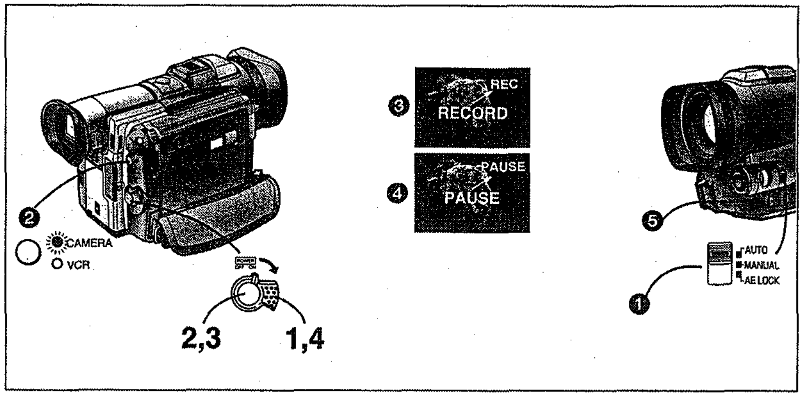
2 Open the Grip Belt Cover and adjust the length of the Grip Belt.

Attaching the Shoulder Strap

Before you go recording outside, we recommend that you attach the Shoulder Strap to prevent the Movie Camera from dropping accidentally.

3 Pull the end of the Shoulder Strap through the Shoulder Strap Holders on the Movie Camera.

4 Fold the end of the Shoulder Strap back and pull it through the Shoulder Strap Length Adjuster.
Pull it out more than 2 cm ① from the Shoulder Strap Length Adjuster so that it cannot slip off.



Recording

When the Mode Selector Switch is set to [AUTO] ①, you can simply turn on the Movie Camera and press the Start/Stop Button to start recording, and the focus and white balance are adjusted automatically.

- Depending on the light source and recording situation, correct automatic focusing and white balance adjustment may not be possible. In such cases, adjust them manually.
(Focus: → 36) (White Balance: → 82, 84)

1 Set the [POWER ON/OFF] Switch to [ON].
The [CAMERA] Lamp lights. ②

2 Press the Start/Stop Button.
Recording starts.
The [RECORD] Indication appears briefly and then changes to [REC]. ③

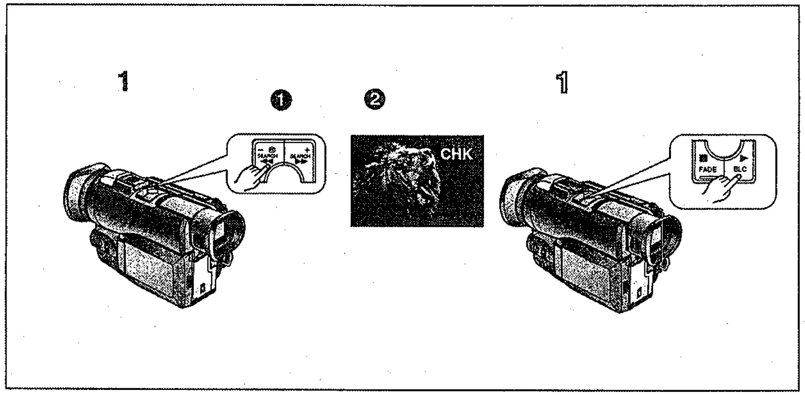
**3 To pause recording:
Press the Start/Stop Button again.**
The [PAUSE] Indication appears. ④

**4 To finish recording:
Set the [POWER ON/OFF] Switch to [OFF].**

- **If you leave the Movie Camera in the Recording Pause Mode for more than 6 minutes, it automatically switches off to protect the tape and to conserve battery power. To resume recording from this condition, set the [POWER ON/OFF] Switch to [OFF] and then to [ON] again.**

Recording Lamp

The Recording Lamp lights ⑤ during recording to indicate that recording is being performed.
If you select [NEXT MENU] on the Menu and then set [REC LAMP] to [OFF], the Recording Lamp does not light. (→ 126-130)



Checking If the Picture Is Recorded

(Recording Check)

To play back the final few seconds of the last recorded scene in the Recording Pause Mode.

1 Press the Reverse Search Button [◀◀] ❶ briefly in the Recording Pause Mode.

The [CHK] Indication ❷ appears.
After checking, the Movie Camera returns to the Recording Pause Mode.

- For Recording Check, the Movie Camera must be in the same mode (SP or LP) as used for recording, otherwise the playback picture is distorted.

Recording Backlit Scenes

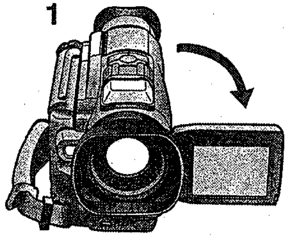
(Backlight Compensation)

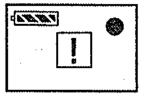
To prevent the backlit subject from being recorded very dark.
(Backlight means that the light falls on the subject from behind, i.e. the subject is between the light source and the Movie Camera.)

1 Keep the Backlight Button [▶] pressed.

The backlight is being compensated as long as you keep the Button pressed, and the subject is recorded more brightly.
(The picture brightens up as a whole.)

Returning to Normal Recording
Release the Backlight Button [▶].





Recording Yourself

(Recording with the LCD Monitor Facing Forward)

To record yourself while viewing the picture on the LCD Monitor or to show the persons in front of the Movie Camera the picture being recorded.

1 Open the LCD Monitor and turn it so that it faces forward (lens side).

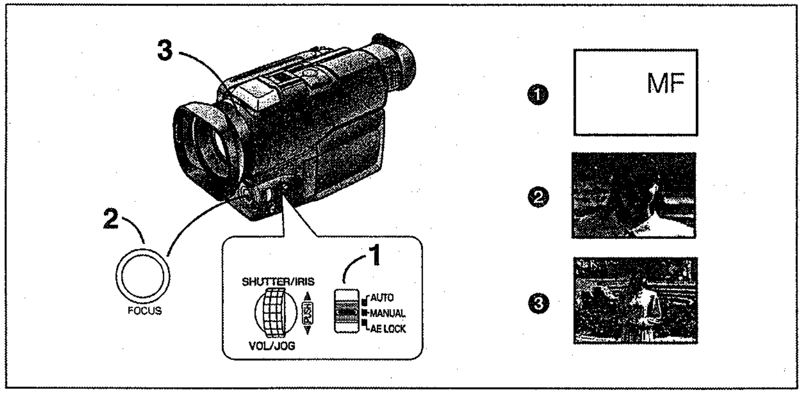
Opening the LCD Monitor automatically turns off the Finder. However, when you turn the LCD Monitor forward, the picture also appears in the Finder.
This lets you aim the Movie Camera and view the picture in the Finder, while the persons in front of the Movie Camera can check the picture on the LCD Monitor during recording.

Mirror Mode
When recording yourself with the LCD Monitor facing forward, the picture as it is being recorded might look unusual too you. If you prefer seeing yourself on the LCD Monitor the way you see yourself in a mirror, select the Mirror Mode:
Selecting [NEXT MENU] on the Menu and then setting [SELFSHOOT] to [MIRROR] reverses the picture on the LCD Monitor and shows it as a mirror-image.
(→ 126-130)
However, even if you have selected the Mirror Mode, the picture is recorded in the normal way.

- In the Mirror Mode, only the following indications are displayed.

● : Recording
●II : Recording Pause
▭ : Remaining Battery Power

When the General Warning/Alarm Indication [!] appears, turn the LCD Monitor backward so that you can confirm the actual Warning/Alarm Indication.



Manually Focusing on the Subject

(Manual Focus)

To adjust the focus manually for subjects and recording situations for which automatic focusing is not precise.

1 Set the Mode Selector Switch to [MANUAL].

The [MNL] Indication appers.

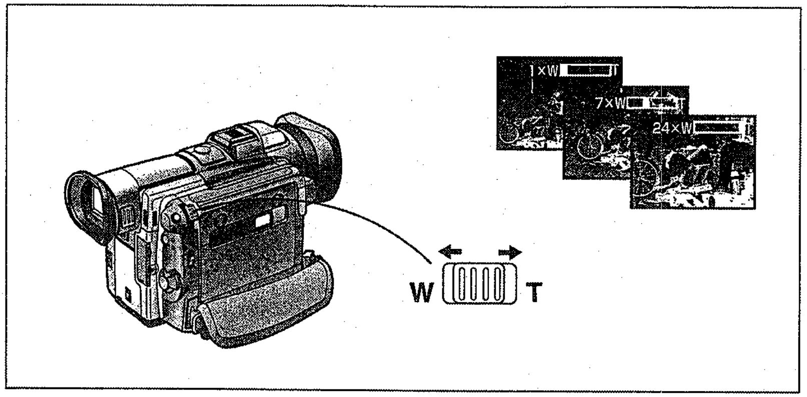
2 Press the [FOCUS] Button to make the [MF] Indication ❶ appear.

3 Turn the Focus Ring on the Lens to adjust the focus.

Changing Back to Automatic Focusing
Keep the [FOCUS] Bottun pressed until the [MF] Indication disappears.

Hint for Manual Focus Adjustment

- If you adjust the focus in the wide-angle setting, the subject may go out of focus when you enlarge it. Therefore, enlarge the subject ❷ before you adjust the focus, so that the picture remains focused when you zoom out ❸.



1—6

Enlarging Your Subject or Widening the Recording Angle
(Zooming In/Out)

Recording close-ups of your subjects and recording wide-angle shots adds special effects to your videos.

1 To record a wider view (Zooming-out): Push the [W/T] Zoom Lever toward [W]. To enlarge your subject (Zooming-in): Push the [W/T] Zoom Lever toward [T].

- The Zoom Magnification Indication appears for a few seconds.
- The farther you push the [W/T] Zoom Lever toward [W] or [T], the faster the zooming speed becomes.
- ♦ During recording, the zooming speed is slower than during recording pause.

Enlarging Your Subjects Even More (Digital Zooming)

Selecting one of the two settings for [D.ZOOM] on the Menu makes it possible to farther enlarge the subject. (→ 126, 128)

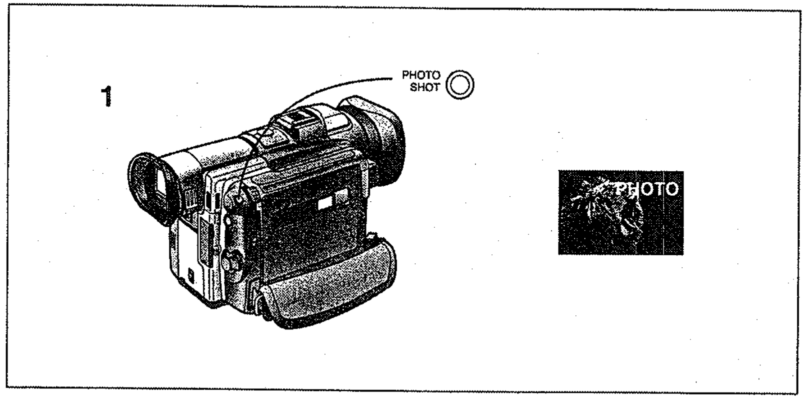
- **24×**: Digital zooming up to 24×.
- **120×**: Digital zooming up to 120×.
- Up to 12×, the zooming is done optically.
- ♦ The higher the Digital Zoom Magnification is, the lower is the picture quality.
- ♦ If you set [D.ZOOM] on the Menu to [24×] or [120×], the [D.ZOOM] Indication appears.

Recording Extra Close-up Shots of Small Subjects (Macro Close-up Function)

When the zoom magnification is 1×, the Movie Camera can focus on subjects down to a distance of approximately 30 mm between lens and subject. This allows recording very small subjects such as insects.

- When you have zoomed to the tele setting, precise focussing is only possible on subjects no closer than 1.2 metres.

1



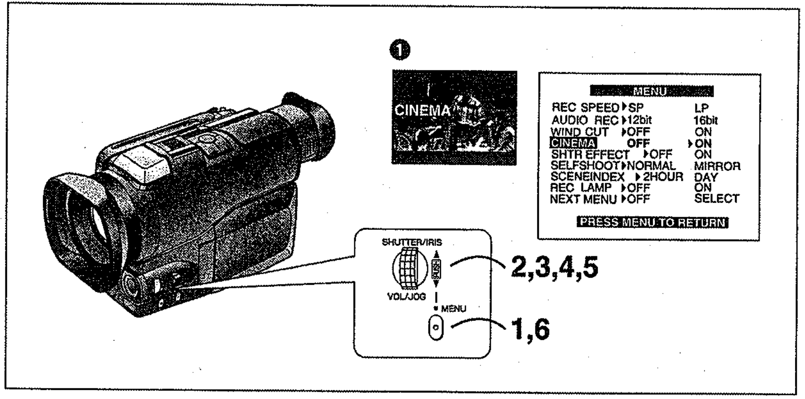
Using the Movie Camera as a Digital Still Camera (Photoshot)

With this function, you can record still pictures with sound for approximately 7 seconds each.
This function is convenient for example for pictures that you want to print on a Video Printer.

1 Press the [PHOTO SHOT] Button. (This function can be used during recording, too.)

The Movie Camera records a still picture for approximately 7 seconds and then switches over to the Recording Pause Mode.

- The image on the LCD Monitor or in the Finder also stands still.
  If you select [NEXT MENU] on the Menu and set [SHTR EFFECT] to [ON], the screen blinks briefly and a simulated shutter click sound can be heard when you press the [PHOTO SHOT] Button.
- With the still pictures that you have recorded in the Photoshot Mode, you can do the following.
  - Index search (→ 62)
    (However, searching for the picture(s) recorded at the beginning of the tape may not be possible.)
  - Automatic printing (→ 120)
- ♦ If you select [NEXT MENU] on the Menu and set [SHTR EFFECT] to [ON], the visual shutter effect and the click sound are also recorded. (There is a slight delay between pressing the [PHOTO SHOT] Button and the actual start of recording. The visual shutter effect and click sound may occur with slight delay after recording of the still picture has started.)
- ♦ The picture quality deteriorates slightly.
- ♦ Using the Photoshot Function makes the Remaining Tape Time Indication disappear. Resuming normal recording makes the Remaining Tape Time Indication appear again.



Recording in the Cinema Mode
(Cinema Mode)

This mode lets you record in the cinema-like wide-screen format.

1 Press the [MENU] Button.
The Menu appears.

2 Turn the [PUSH] Dial to select [NEXT MENU].

3 Press the [PUSH] Dial to select [SELECT].

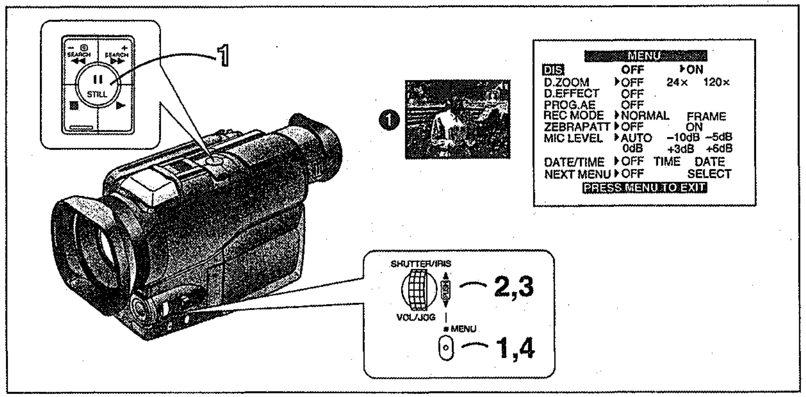
4 Turn the [PUSH] Dial to select [CINEMA].

5 Press the [PUSH] Dial to select [ON].

6 Press the [MENU] Button twice to exit the Menu.

- ♦ In the Cinema Mode, black bars appear at the top and bottom of the LCD Monitor and the Finder screen. ❶

Cancelling the Cinema Mode
Set [CINEMA] on the Menu to [OFF].



```
              MENU
DIS          OFF       ▶ON
D.ZOOM      ▶OFF      24×    120×
D.EFFECT     OFF
PROG.AE      OFF
REC MODE    ▶NORMAL         FRAME
ZEBRAPATT   ▶OFF             ON
MIC LEVEL   ▶AUTO     -10dB  -5dB
             0dB      +3dB   +6dB
DATE/TIME   ▶OFF   TIME     DATE
NEXT MENU   ▶OFF            SELECT
       PRESS MENU TO EXIT
```

Recording with Minimised Camera Shake (Digital Image Stabilizer)

In recording situations where shaking of the Movie Camera is likely to happen, for example when you have zoomed in on a distant subject or when you record while walking, you can use this function to stabilize the image.

- In case of very strong camera shake, it may not be possible to stabilize the picture.

1 Press the [MENU] Button.
The Menu appears.

2 Turn the [PUSH] Dial to select [DIS].

3 Press the [PUSH] Dial to select [ON].

4 Press the [MENU] Button to exit the Menu.
The [ ] Indication ❶ appears.

- In a dimly lit place, the Digital Image Stabilizer Function may not work. In this case, the [ ] Indication flashes.
- Under fluorescent lamps, the picture brightness may fluctuate and the colours may be unnatural.
- The picture quality may deteriorate slightly.
- The subject becomes slightly enlarged.
- When you use a tripod, we recommend that you set [DIS] to [OFF].

Cancelling the Digital Image Stabilizer Function
Set [DIS] on the Menu to [OFF].

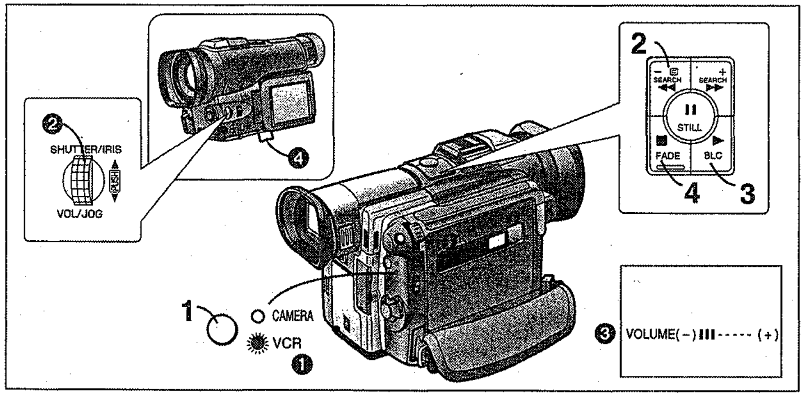
Recording Still Pictures

You can record still pictures of any desired length together with sound either in the middle of a normal recording or from the Recording Pause Mode.

1 Press the Still Button [❚❚].

Cancelling the Still Picture Recording Mode
Press the Still Button [❚❚] again.

1—7



Viewing the Just Recorded Scenes on the Movie Camera (Playback)

You can play back recorded scenes right after recording.

1 Press the [VCR/CAMERA] Button so that the [VCR] Lamp ❶ lights.

2 Press the Rewind Button [◀◀] to rewind the tape.
- Rewind the tape to the point where the recording started.
- If the tape reaches the beginning, rewinding automatically stops.

3 Press the Play Button [▶] to start playback.

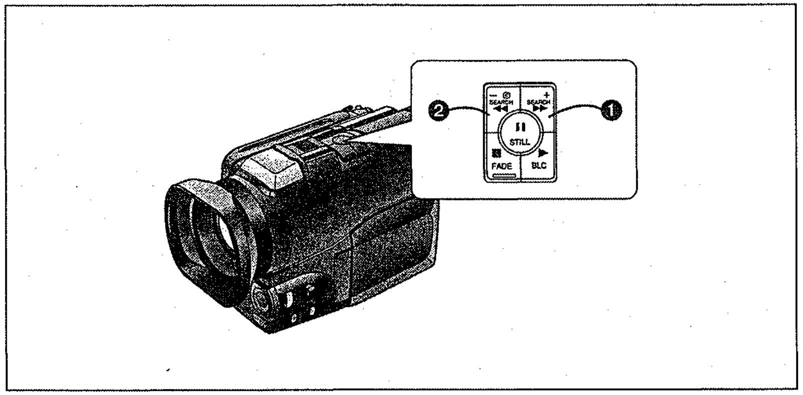
4 To stop playback: Press the Stop Button [■].

■ Adjusting the Sound Volume

Keep the [PUSH] Dial ❷ pressed until the [VOLUME] Indication ❸ appears. Then, turn the [PUSH] Dial to adjust the volume.
To make the [VOLUME] Indication disappear, press the [PUSH] Dial again until the [VOLUME] Indication disappears.

Making the Date/Time Indication Appear
This Movie Camera automatically records the date and time not directly in the picture but as part of the sub code (→ 152).
To make the Date/Time Indication appear, set [DATE/TIME] on the Menu to the desired setting.

Using the Support Leg for Easy-to-View Playback
Extending the Support Leg ❹ from the underside of the Movie Camera makes it easier to view the playback picture on the LCD Monitor.



Searching for a Scene You Want to Play Back

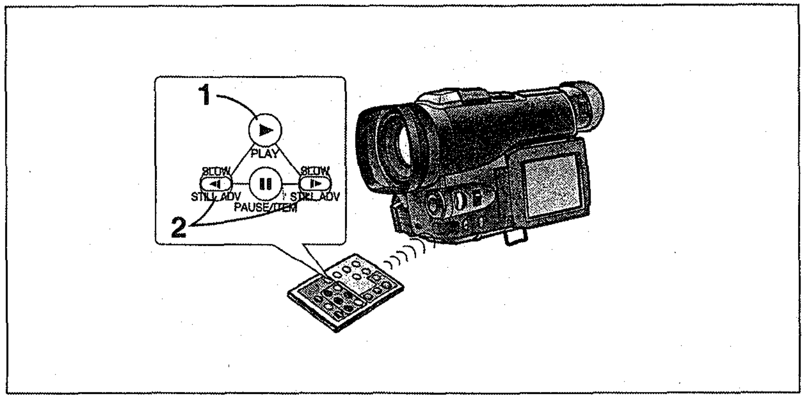
Cue Playback
Keep the Cue Button [▶▶] ❶ pressed during playback.

Review Playback
Keep the Review Button [◀◀] ❷ pressed during playback.

Search Lock Function
For longer Cue or Review Playback, press the Cue Button [▶▶] or the Review Button [◀◀] only briefly. As this locks the search function, you do not need to keep the button pressed for a long time.

- To resume normal playback, press the Play Button [▶].
- In Cue and Review Playback, pictures with fast-moving subjects may contain mosaic-like patterns.

Hyper Check Function
- If you press the Fast-forward Button [▶▶] during fast-forwarding of the tape or the Rewind Button [◀◀] during rewinding of the tape, Cue Playback or Review Playback continues for as long as you keep the Button pressed.
- Before and after activating Cue Playback or Review Playback, the picture may momentarily be distorted.



Playing Back in Slow Motion
(Slow Motion Playback)

1 Press the Play Button [▶].

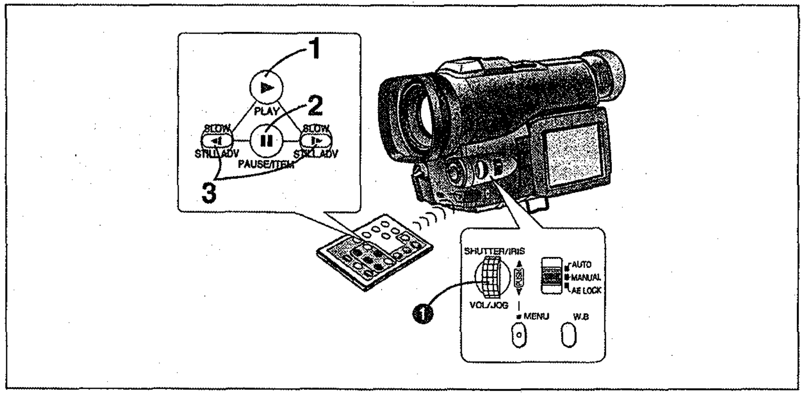
2 Press the Slow Motion/Still Advance Button [◀❙] or [❙▶] on the Remote Controller.

Pressing the [◀❙] Button starts slow motion playback in reverse direction, and pressing the [❙▶] Button starts slow motion playback in forward direction.

Scenes recorded in the SP Mode are played back at approximately 1/5th of the normal speed.
Scenes recorded in the LP Mode are played back at approximately 1/3rd of the normal speed.

Resuming Normal Playback
Press the Play Button [▶].
Playback continues with normal speed.

- During slow motion playback in reverse direction, the Time Code Indication may not be accurate.



Playing Back Still Pictures and Advancing Them One by One
(Still Playback/Still Advance Playback)

You can freeze the action during playback and advance the still pictures one by one.

1 Press the Play Button [▶].

2 Press the Pause Button [❚❚].

The playback picture stops in the Still Playback Mode.

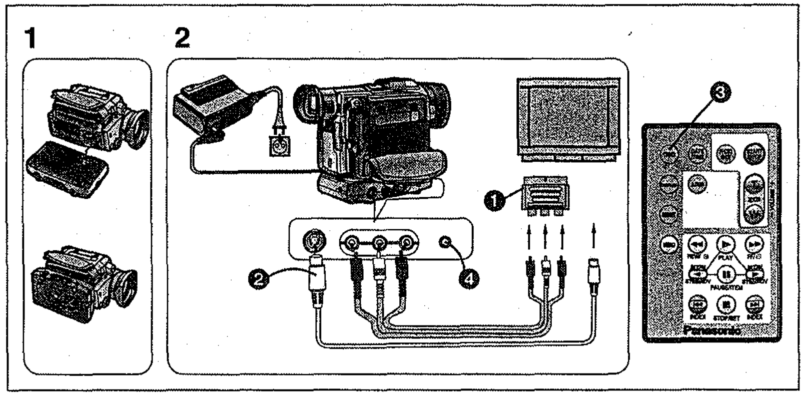
3 Press the Slow Motion/Still Advance Button [◀❙] or [❙▶] on the Remote Controller.

Pressing the [◀❙] Button advances the still picture frame by frame in reverse direction. Pressing the [❙▶] Button advances the still picture frame by frame in forward direction.

Resuming Normal Playback
Press the Play Button [▶].
Playback continues with normal speed.

- If you keep the [❙▶] Button on the Remote Controller pressed for more than 1 second during Still Advance Playback, the Movie Camera switches over to the Slow Motion Playback Mode with slower speed than in the normal Slow Motion Playback Mode.
- If you leave the Movie Camera in the Still Playback Mode for more than 6 minutes, it switches over to the Stop Mode to protect the video heads against excessive wear.
- During Still Advance Playback, the Time Code Indication may not be accurate.

Using the Jog Dial (Jog Playback)
By turning the Jog Dial ([PUSH] Dial) ❶ on the Movie Camera in the Still Playback Mode, you can advance the still pictures one by one in forward or reverse direction.



Playing Back on a TV
(With the Output Terminal Box [AV ONE TOUCH STATION] Attached)

Attaching the Output Terminal Box [AV ONE TOUCH STATION] to the Movie Camera makes it possible to playback recorded scenes on a TV.

1 Attach the Output Terminal Box [AV ONE TOUCH STATION]. (→ 110)

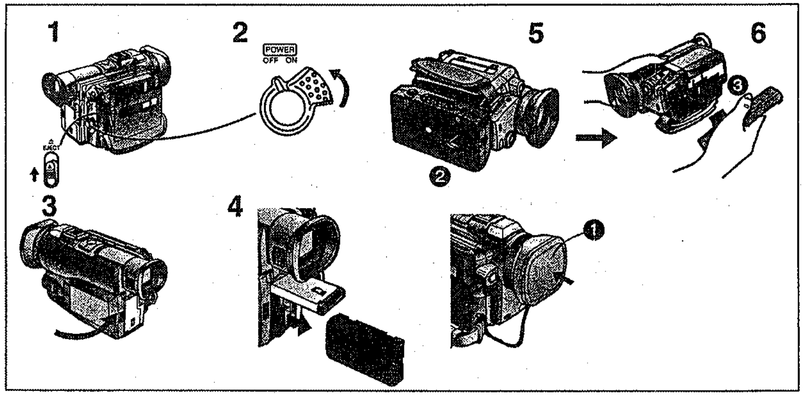
2 Connect the Video and Audio Output Sockets to the Video and Audio Input Sockets on the TV.

Use the AV Cable and 21-pin Adaptor ❶ to connect to the TV. If your TV is equipped with an S-Video Socket, also connect the S-Video Cable ❷.

- Before connecting, turn off both the Movie Camera and the TV.
- If a cassette recorded with copyright protection signal is played back, the screen becomes black. However, scenes recorded with this Movie Camera do not contain a copyright protection signal.

Making the Indications Appear on the TV Screen
Press the [OSD] Button ❸ on the Remote Controller.
The On-Screen Indications also appear on the TV screen.

Playing Back the Sound via Headphones
Using the [PHONE] Socket ❹ on the Output Terminal Box [AV ONE TOUCH STATION] lets you listen to the playback sound via headphones.
Even if the sound is played back via headphones, the sound from the Movie Camera's built-in speaker can also be heard. If you want to mute the sound from the speaker, lower the volume (→ 46).


1
2
POWER
OFF ON
EJECT
3
4
5
6
❷
❸
❶

After Use

1 **Take out the cassette. (➔ 22)**

2 **Set the [POWER ON/OFF] Switch to [OFF].**

3 **Retract the Finder and close the LCD Monitor.**

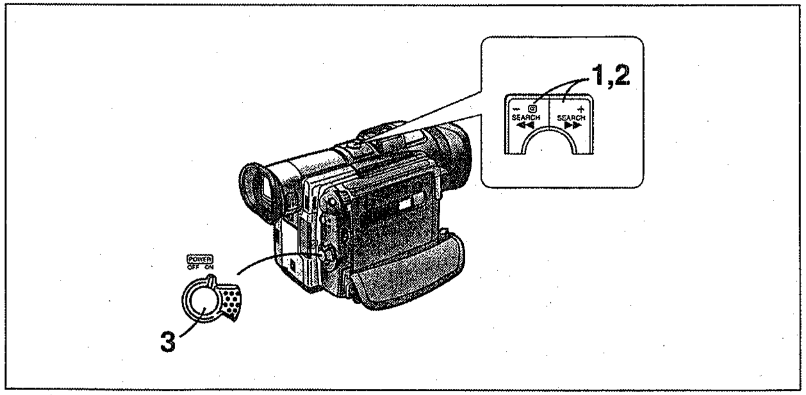
4 **Take out the Battery. (➔ 18)**

Attaching the Lens Cap ❶
After use, attach the supplied Lens Cap to the Lens to protect it.

Removing the Output Terminal Box [AV ONE TOUCH STATION]
If the Output Terminal Box [AV ONE TOUCH STATION] is attached to the Movie Camera, remove it in the following way:

5 **Turn the Locking Handle in the direction of the arrow ❷.**

6 **Pull off the Output Terminal Box [AV ONE TOUCH STATION] in the direction of the arrow ❸.**


1,2
SEARCH
◀◀
SEARCH
▶▶
POWER
OFF ON
3

Viewing Recorded Scenes During Recording Pause

(Camera Search)

You can view recorded scenes when the Movie Camera is in the Recording Pause Mode.
The Camera Search Function is convenient to search for a scene from which you want to start recording a new scene with smooth scene-to-scene transition.

1 **Keep the Reverse Search Button [◀◀] or the Forward Search Button [▶▶] pressed for more than 1 second.**
Pressing the [◀◀] Button plays back the picture in reverse direction.
Pressing the [▶▶] Button plays back the picture in forward direction.

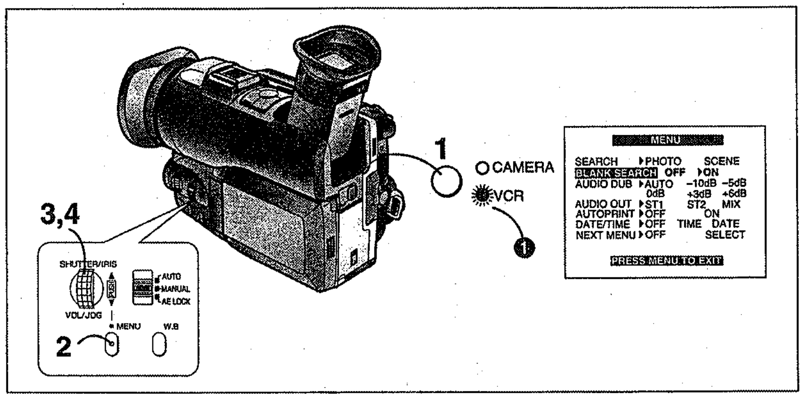
Starting to Record from the Desired Position

2 **Release the pressed Search Button.**
The Movie Camera is in the Recording Pause Mode.

3 **Press the Start/Stop Button to start recording.**
The Movie Camera starts recording a new scene with smooth scene-to-scene transition.

- In the Camera Search Mode, the picture may contain mosaic-like patterns. However, this is a phenomenon particular to digital video and completely normal.

◆ If the Recording Speed Mode (SP/LP) of the previous and the new recording are different, the playback picture may be distorted.


1
○ CAMERA
VCR
❶
3,4
SHUTTER/IRIS
VOL/JOG
AUTO
MANUAL
AE LOCK
MENU
W.B
2
MENU
SEARCH ▶PHOTO SCENE
BLANK SEARCH OFF ▶ON
AUDIO DUB ▶AUTO −10dB −5dB
0dB +3dB +6dB
AUDIO OUT ▶ST1 ST2 MIX
AUTOPRINT ▶OFF ON
DATE/TIME ▶OFF TIME DATE
NEXT MENU ▶OFF SELECT
PRESS MENU TO EXIT

Searching for the End of the Recorded Part on a Cassette

(Blank Search)

With the Blank Search Function you can quickly locate the end of the recorded part on a cassette (or a blank part between recordings).

1 **Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights. ❶**

2 **Press the [MENU] Button.**
The Menu appears.

3 **Turn the [PUSH] Dial to select [BLANK SEARCH].**

4 **Press the [PUSH] Dial to select [ON].**
Approximately 1 second before the end of the last recorded scene, the Movie Camera switches over to the Still Playback Mode.

- If there is no blank part on a cassette, the Movie Camera stops at the end of the tape.
- When the Blank Search has finished, you can press the [VCR/CAMERA] Button so that the [CAMERA] Lamp lights, and then start recording. The new scene is recorded with a smooth transition from the last to the new scene.

Searching for the Beginning of Recorded Scenes Marked with Index Signal
(Index Search)

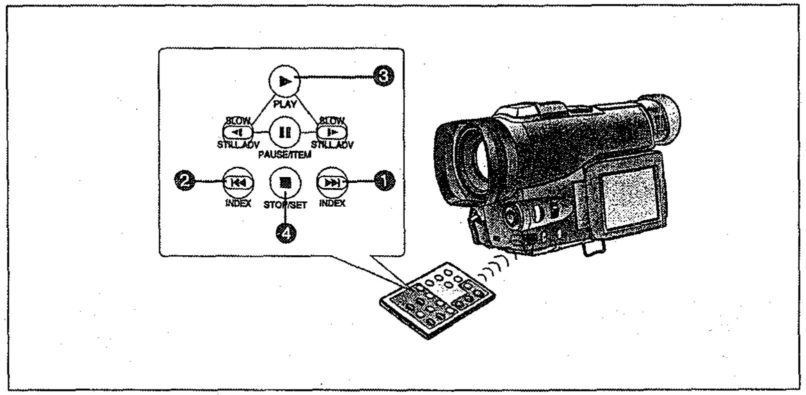
Index Search
To allow easy searching for desired scenes, this Movie Camera automatically records index signals during recording as follows:

① Photoshot Index Signal
To search for still pictures recorded in the Photoshot Mode (➔ 40) and to use for automatic printing (➔ 120).
A photoshot index signal is automatically recorded every time you record a still picture in the Photoshot Mode.

② Scene Index Signal
To search for the beginning of recorded scenes.
A scene index signal is automatically recorded in the following cases:
- When you start recording after inserting a cassette.
- Depending on the setting of [SCENEINDEX] on the Menu (➔ 126-130):

[2HOUR]:	An index signal is recorded when recording is restarted after a lapse of more than 2 hours.
[DAY]:	An index signal is recorded when recording is restarted after the date has changed since the last recording.

(While an index signal is being recorded, the [INDEX] Indication flashes for a few seconds.)



Searching for Photoshot Pictures
(Photoshot Index Search)
- Press the [VCR/CAMERA] Button on the Movie Camera so that the [VCR] Lamp lights.
- Set [SEARCH] on the Menu to [PHOTO]. (➔ 126, 132) (The initial setting is [PHOTO].)

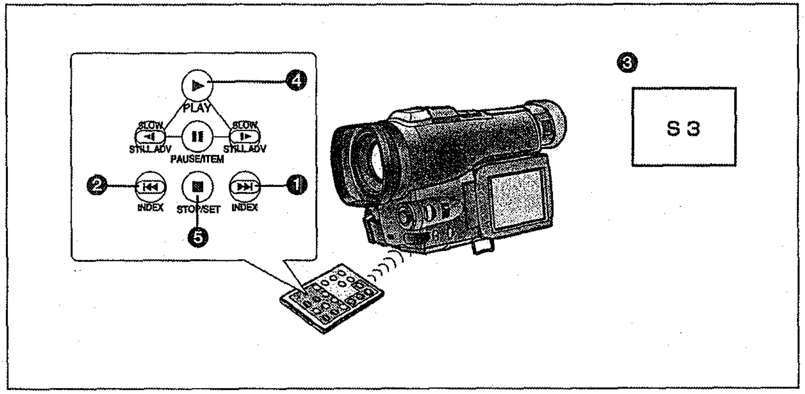
Photoshot Index Search in Forward Direction
Press the Index Button [▶▶I] ① on the Remote Controller.

Photoshot Index Search in Reverse Direction
Press the Index Button [I◀◀] ② on the Remote Controller.

- At every press of the corresponding button, the tape is fast-forwarded or rewound to the next still picture recorded in the Photoshot Mode.

After reaching the next still picture, the still picture is played back continually together with the sound (only for apporximately 4 seconds). (If you leave the Movie Camera in the Still Playback Mode for more than 6 minutes, it switches over to the Stop Mode to protect the video heads against excessive wear).

- The Photoshot Index Search may not work correctly for still pictures recorded near the beginning of the tape.
- If you keep the [I◀◀] or [▶▶I] Button pressed for more than 2 seconds, the Intro Search Function is activated and it plays back all still pictures recorded in the Photoshot Mode on the cassette one after another for a few seconds each.
(To cancel the Intro Search Function, press the Play Button [▶] ③ or the Stop Button [■] ④.)



Searching for the Beginning of Recorded Scenes (Scene Index Search)

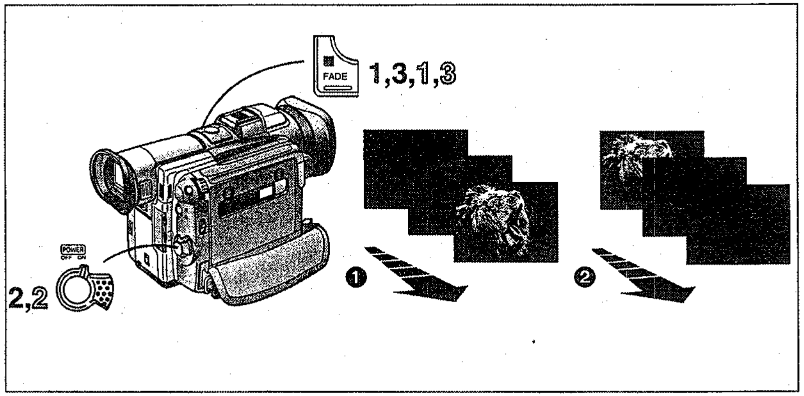
- Press the [VCR/CAMERA] Button on the Movie Camera so that the [VCR] Lamp lights.
- Set [SEARCH] on the Menu to [SCENE]. (➔ 126, 132)

Scene Index Search in Forward Direction
Press the Index Button [▶▶I] ① on the Remote Controller.

Scene Index Search in Reverse Direction
Press the Index Button [I◀◀] ② on the Remote Controller.

- When you briefly press the corresponding button once, the [S1] Indication appears and the search for the next scene marked with an index signal starts. After the Scene Index Search has started, every time you press the button, the indication changes successively from [S2] to [S9], and the beginning of the scene corresponding to the selected number is located. ③
After reaching the desired scene, playback starts automatically. (At a time, Scene Index Search in forward or reverse direction is possible up to the ninth scene marked with index signal from the present tape position.)

- If the distance between two scene index signals is less than 1 minute, the Scene Index Search may not work correctly.
- The Scene Index Search may not work correctly for scenes recorded near the beginning of the tape.
- If you keep the [I◀◀] or [▶▶I] Button pressed for more than 2 seconds, the Intro Search Function is activated and it plays back the beginning of all scenes marked with an index signal on the cassette one after another for a few seconds each.
(To cancel the Intro Search Function, press the Play Button [▶] ④ or the Stop Button [■] ⑤.)



Fading In/Out

Fading In ❶
Fading-in lets you make the picture and sound appear gradually from a black screen at the beginning of a scene.

1 **With the Movie Camera in the Recording Pause Mode, keep the Fade Button [■] pressed.**
The picture gradually disappears.

2 **When the picture has completely disappeared, press the Start/Stop Button to start recording.**

3 **Approximately 3 seconds after the recording has started, release the Fade Button [■].**
The picture gradually appears again.

Fading Out ❷
Fading-out lets you make the picture and sound disappear gradually into a black screen at the end of a scene.

1 **During recording, keep the Fade Button [■] pressed.**
The picture gradually disappears.

2 **After the picture has completely disappeared, press the Start/Stop Button to stop recording.**
The Movie Camera is in the Recording Pause Mode.

3 **Release the Fade Button [■].**

1—11

Recording In Various Situations

(Programme AE)

This function lets you select Automatic Exposure settings optimized for special recording situation.

1 **Set the Mode Selector Switch to [MANUAL].**
The [MNL] Indication appears.

2 **Press the [MENU] Button.**
The Menu appears.

3 **Turn the [PUSH] Dial to select [PROG.AE].**

4 **Press the [PUSH] Dial to select the desired mode ([🏃], [👥] or [👤]).**
If you have adjusted the shutter speed (→ 86) or the iris (→ 88), it is not possible to select a Programme AE Mode.

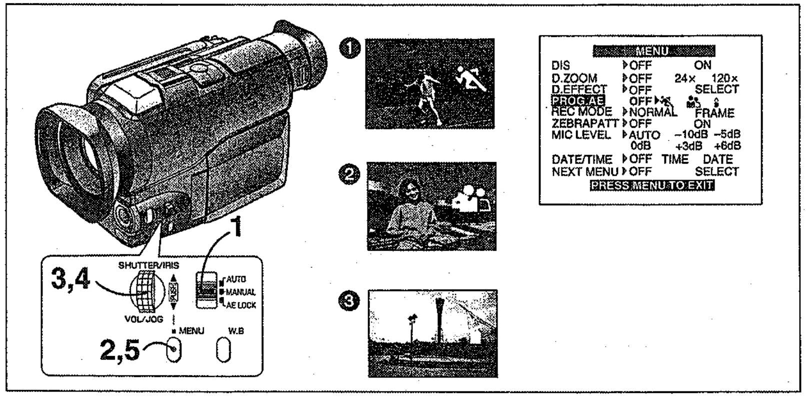
5 **Press the [MENU] Button to exit the Menu.**
The indication of the selected mode appears.

[🏃] Sports Mode ❶
To record scenes with fast-moving subjects such as sports scenes.

[👥] Portrait Mode ❷
To make subjects stand out sharply from the background.

[👤] Low Light Mode ❸
To record dark scenes more brightly.

Cancelling the Programme AE Function
Set [PROG.AE] on the Menu to [OFF].



Sports Mode

- When playing back scenes recorded in the Sports Mode, you can enjoy slow motion and still playback of very sharp images with fine details.
- Avoid recording under fluorescent, mercury-vapour or natrium lamps in this mode as the colour and the brightness of the playback picture might fluctuate.
- When recording subjects lit by strong lights or with much light reflection, the playback picture may contain vertical streaks of light.
- When the scene is not sufficiently lit, the [🏃] Indication flashes.
- When using this mode for recording indoors, the playback picture may flicker.
- It is not possible to select the Sports Mode [🏃] together with the Gain-up Mode [GAINUP] on the [MENU (D.EFFECT)] Menu.

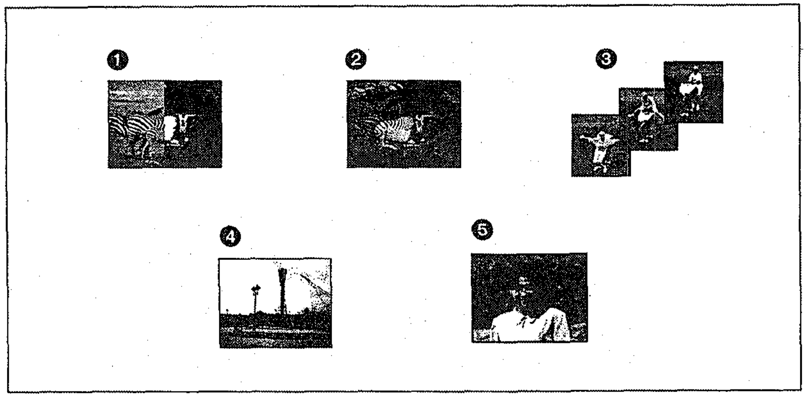
Portrait Mode

- When using this mode for recording indoors, the playback picture may flicker.
- It is not possible to select the Portrait Mode [👥] together with the Gain-up Mode [GAINUP] on the [MENU (D.EFFECT)] Menu.

Low Light Mode

- It may not be possible to sufficiently brighten up extremely dark scenes.

- If you have adjusted the shutter speed (→ 86) or the iris (→ 88), it is not possible to select a Programme AE Mode ([🏃], [👥] or [👤])



Recording with Special Effects
(Digital Effects)

There are 5 different modes available for adding special digital picture effects.

❶ **Wipe Mode [WIPE]**
It gradually replaces a picture of the last recorded scene with the picture of the new scene, like drawing a curtain. For details, (➜ 78).

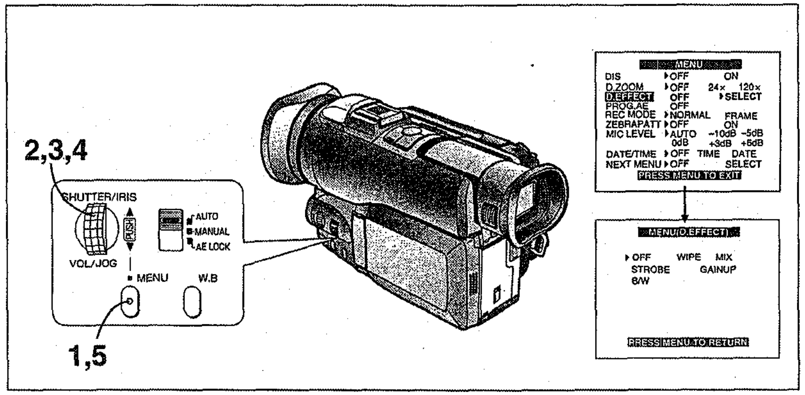
❷ **Mix Mode [MIX]**
It gradually fades out the picture of the last recorded scene while fading in the picture of the new scene. For details, (➜ 80).

❸ **Strobe Mode [STROBE]**
It records the pictures with a strobescope-like effect.

❹ **Gain-up Mode [GAINUP]**
It electronically brightens up the picture.
- In this mode, adjust the focus manually.
- ♦ Some After-image distortion may occur during recording with the Gain-up Function.

❺ **Monotone Mode [B/W]**
The picture is recorded in black and white.

- ♦ The Digital Effects cannot be used when the Digital Image Stabilizer Function or the Digital Zoom Function is activated, or when [REC MODE] on the Menu is set to [FRAME].
When you want to use a digital effect, make sure that [D.ZOOM] and [DIS] on the Menu are set to [OFF] and that [REC MODE] is set to [NORMAL].


2,3,4
SHUTTER/IRIS
PUSH
AUTO
MANUAL
AE LOCK
VOL/JOG
MENU
W.B
1,5
MENU
DIS ▸OFF ON
D.ZOOM ▸OFF 24× 120×
D.EFFECT OFF ▸SELECT
PROG.AE OFF
REC MODE ▸NORMAL FRAME
ZEBRAPATT ▸OFF ON
MIC LEVEL ▸AUTO −10dB −5dB 0dB +3dB +6dB
DATE/TIME ▸OFF TIME DATE
NEXT MENU ▸OFF SELECT
PRESS MENU TO EXIT
MENU(D.EFFECT)
▸OFF WIPE MIX
STROBE GAINUP
B/W
PRESS MENU TO RETURN

Recording with Special Effects
(Digital Effects) (Continued)

Selecting the Desired Digital Effect

1 **Press the [MENU] Button.**
The Menu appears.

2 **Turn the [PUSH] Dial to select [D.EFFECT].**
- ♦ The Digital Effects cannot be used when the Digital Image Stabilizer Function or the Digital Zoom Function is activated, or when [REC MODE] on the Menu is set to [FRAME].
When you want to use a digital effect, make sure that [D.ZOOM] and [DIS] on the Menu are set to [OFF] and that [REC MODE] is set to [NORMAL].

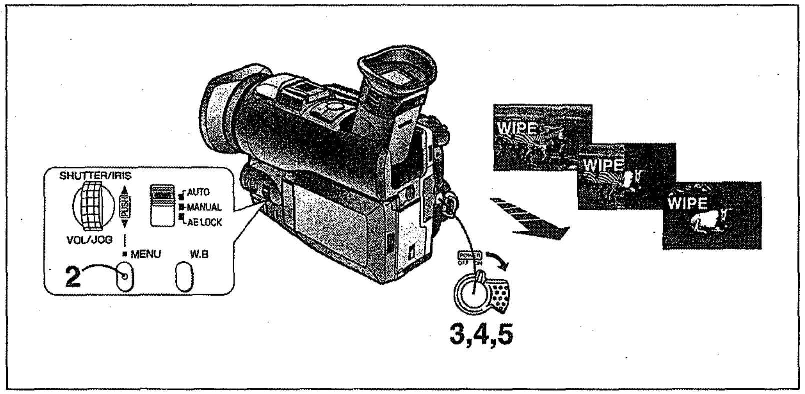
3 **Press the [PUSH] Dial to select [SELECT].**
The [MENU (D.EFFECT)] Menu appears.

4 **Press the [PUSH] Dial to select the desired digital effect.**

5 **Press the [MENU] Button twice to exit the Menu.**
- The picture has the selected digital effect now. However, the effect of the Wipe Function and the Mix Function only become visible when actually recording in the respective mode. (➜ 78, 80)

- ♦ If you have selected [GAINUP] on the [MENU (D.EFFECT)] Menu, it is not possible to select the Manual White Balance Mode.
- ♦ If you have adjusted the shutter speed (➜ 86) or the iris (➜ 88), it is not possible to select [GAINUP] on the [MENU (D.EFFECT)] Menu.
- ♦ It is not possible to select the Sports Mode [ ] or the Portrait Mode [ ] together with the Gain-up Mode [GAINUP] on the [MENU (D.EFFECT)] Menu.

Cancelling the Digital Effect
Set [D.EFFECT] on the Menu to [OFF].


SHUTTER/IRIS
PUSH
AUTO
MANUAL
AE LOCK
VOL/JOG
MENU
W.B
2
WIPE
WIPE
WIPE
3,4,5

Recording with Special Effects
(Digital Effects) (Continued)

■ Wipe Mode
It gradually replaces a still picture of the last recorded scene with the moving picture of the new scene, like drawing a curtain.

After performing steps 1-3 on page 76:

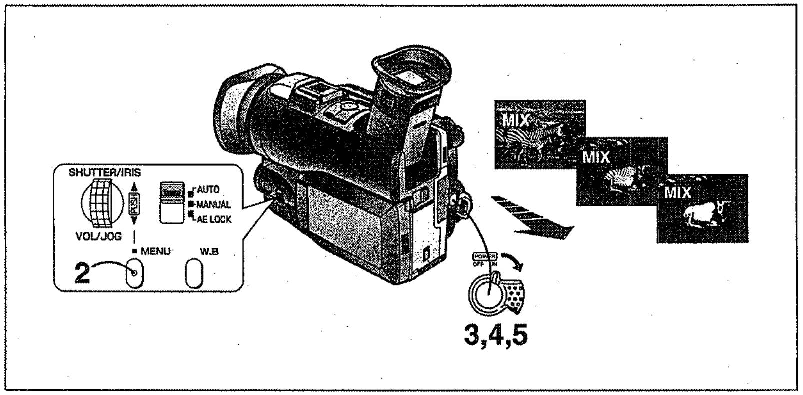
1 **Select [WIPE] on the [MENU (D.EFFECT)] Menu. (➜ 76)**

2 **Press the [MENU] Button twice to exit the Menu.**
The [WIPE] Indication appears.

3 **Press the Start/Stop Button to start recording.**
The normal recording starts.

4 **Press the Start/Stop Button to pause recording.**
The last picture is stored in memory.

5 **Press the Start/Stop Button to start recording again.**
The last picture of the previous scene is gradually replaced by the new scene.



Recording with Special Effects

(Digital Effects) (Continued)

■ Mix Mode

It gradually fades out a still picture of the last recorded scene while fading in the moving picture of the new scene.

After performing steps 1-3 on page 76:

1 Select [MIX] on the [MENU (D.EFFECT)] Menu. (→ 76)

2 Press the [MENU] Button twice to exit the Menu.

The [MIX] Indication appears.

3 Press the Start/Stop Button to start recording.

The normal recording starts.

4 Press the Start/Stop Button to pause recording.

The last picture is stored in memory.

5 Press the Start/Stop Button to start recording again.

The last picture gradually fades out while the new scene fades in.

Recording with Natural Colours

(White Balance)

This Movie Camera automatically adjusts the white balance to ensure that the pictures are recorded with natural colours. For certain types of subjects and lighting conditions, however, this Auto White Balance Adjustment Mode may not be able to ensure natural colours (→ 158, 160). In these cases, adjust the white balance manually.

1 Set the Mode Selector Switch to [MANUAL].

The [MNL] Indication appears.

2 Press the [W.B] Button.

Repeatedly press the [W.B] Button to select the desired White Balance Mode.

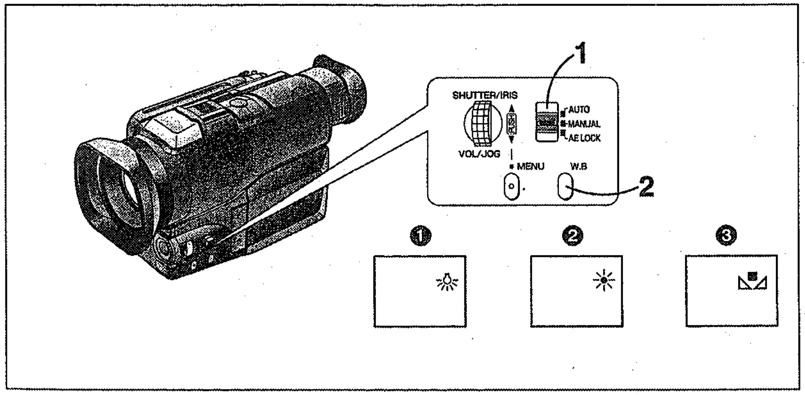
The modes change in the following order:

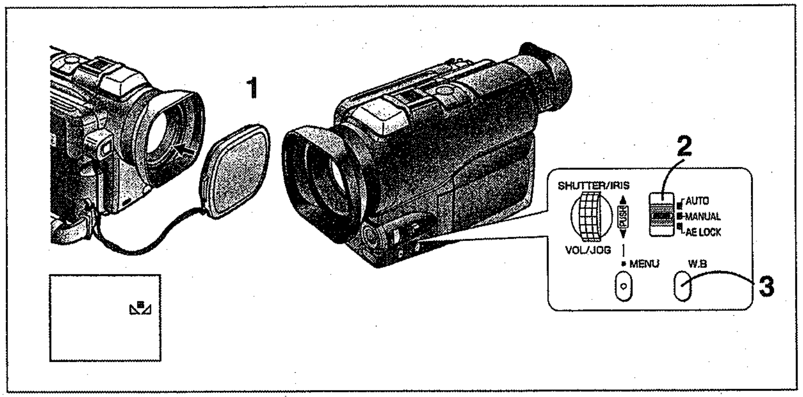
❶ Indoor (Incandescent Lamp) Mode (☼)
❷ Outdoor Mode (✳)
❸ Lock Mode (▙)

♦ If you select [GAINUP] on the [MENU (D.EFFECT)] Menu, you cannot select or change the White Balance Mode.

Returning to the Auto White Balance Adjustment Mode

Set the Mode Selector Switch to [AUTO].





Adjusting the White Balance Manually

Use the Manual White Balance Adjustment Mode for all types of lighting outside the range ❶ (→ 160), as the Auto White Balance Adjustment Mode can only ensure natural colours for the types of lighting within that range. For optimum results under almost any types of lighting, we recommend that you adjust the white balance manually for each new scene.

1 Attach the Lens Cap and zoom in until the entire screen becomes white.

2 Set the Mode Selector Switch to [MANUAL].

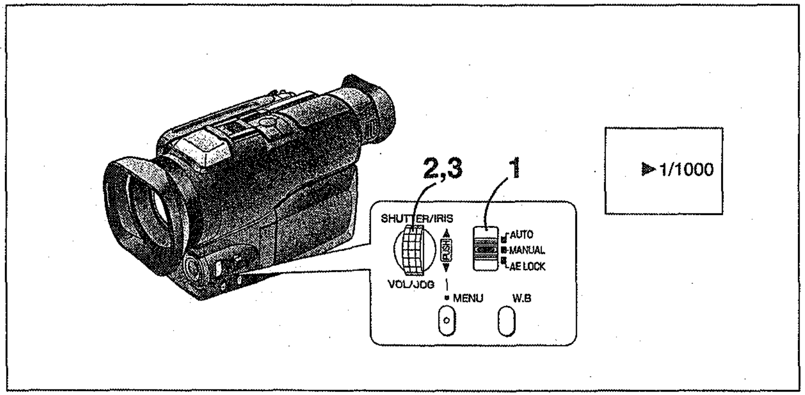
The [MNL] Indication appears.

3 Keep the [W.B] Button pressed until the [▙] Indication stops flashing and remains lit.

- The Manual White Balance Adjustment is now finished. If you want to use this setting again later on, for example after having used Automatic White Balance Adjustment, you can recall it by pressing the [W.B] Button 3 times. (In this case, the [▙] Indication flashes.)
- ♦ When the [▙] Indication remains flashing under weak illumination, the Manual White Balance Adjustment can not be set manually.

Returning to the Auto White Balance Adjustment Mode

Set the Mode Selector Switch to [AUTO].



Adjusting the Shutter Speed Manually

To achieve special creative effects or to cope with special lighting situations or fast-action scenes, you can adjust the shutter manually.

1 Set the Mode Selector Switch to [MANUAL].

The [MNL] Indication appears.

2 Press the [PUSH] Dial.

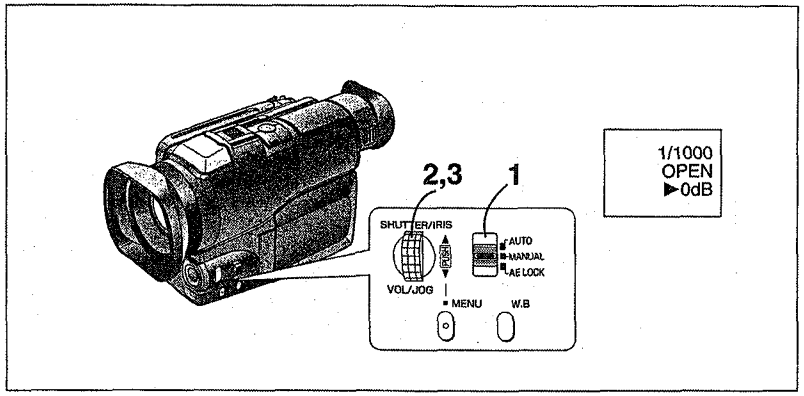
If you have adjusted the shutter speed, it is not possible to select a Programme AE Mode ([⛷], [👥], or [🕯]) or the Gain-up Mode [GAINUP] on the [MENU (D.EFFECT)] Menu.

3 Turn the [PUSH] Dial to adjust the shutter speed.

Range of Shutter Speed Adjustment
1/50 –1/8000 s
The standard shutter speed is 1/50 s.
The nearer to [1/8000] a setting you select, the faster the shutter speed becomes.

Returning to the Normal Shutter Speed
Set the Mode Selector Switch to [AUTO].

1—14



Adjusting the Iris (F Number) Manually

To achieve special creative effects or to cope with special lighting situations or fast-action scenes, you can adjust the iris (F number) manually.

1 Set the Mode Selector Switch to [MANUAL].

The [MNL] Indication appears.

2 Press the [PUSH] Dial 2 times.

The [▶F] Indication appears.

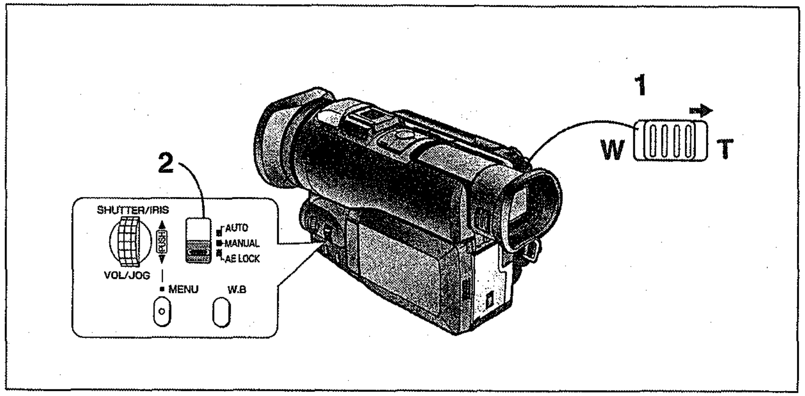
3 Turn the [PUSH] Dial to adjust the iris.

Range of iris adjustment
CLOSE (Closed) → F16.0...F1.7 → OPEN (Opened)
+0dB...+18dB

The nearer to [CLOSE] a value you select, the darker the picture becomes.
The nearer to [OPEN] a value you select, the brighter the picture becomes.
The figures with +dB show the Gain-up value. If you increase the value too much, the picture deteriorates.

Returning to the Normal Iris Value (F Number)
Set the Mode Selector Switch to [AUTO].

- Manually adjusting the shutter speed (→ 86) after performing manual iris adjustment changes the iris back to automatic adjustment.
  Threfore, if you want to adjust both the shutter speed and iris manually, be sure to adjust the shutter speed first.
- If you have adjusted the iris, it is not possible to select a Programme AE Mode ([⛷], [👥] or [🕯]) or the Gain-up Mode [GAINUP] on the [MENU (D.EFFECT)] Menu.



Recording with Fixed Brightness

(AE Lock)

The AE Lock Function lets you record a subject with the same brightness even when the lighting conditions change greatly. For example, when you record a person who moves from a bright to a dark place, or vice versa, this function prevents the person's face from becoming brighter or darker.

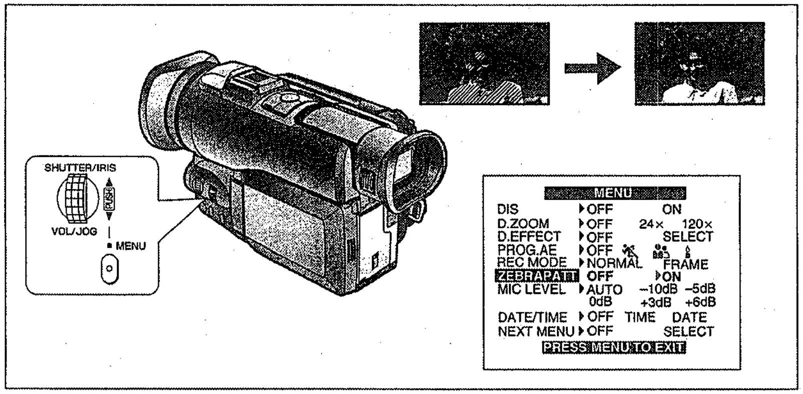
1 Push the [W/T] Zoom Lever toward [T] to zoom in on the subject.

2 Set the Mode Selector Switch to [AE LOCK].

The [AE LOCK] Indication appears.
The brightness of the picture is now locked to the value it had at the moment of setting the switch to [AE LOCK].

Cancelling the AE Lock Function
Set the Mode Selector Switch to [AUTO] or [MANUAL].

Locking the Brightness at a Desired Level
After Step 1 above, set the Mode Selector Switch to [MANUAL] to adjust the brightness manually (→ 86, 88) and then set the Mode Selector Switch to [AE LOCK].


SHUTTER/IRIS
PUSH
VOL/JOG
MENU
MENU
DIS ▸OFF ON
D.ZOOM ▸OFF 24× 120×
D.EFFECT ▸OFF SELECT
PROG.AE ▸OFF
REC MODE ▸NORMAL FRAME
ZEBRAPATT OFF ▸ON
MIC LEVEL ▸AUTO –10dB –5dB 0dB +3dB +6dB
DATE/TIME ▸OFF TIME DATE
NEXT MENU ▸OFF SELECT
PRESS MENU TO EXIT

Other Convenient Functions

Zebra Pattern

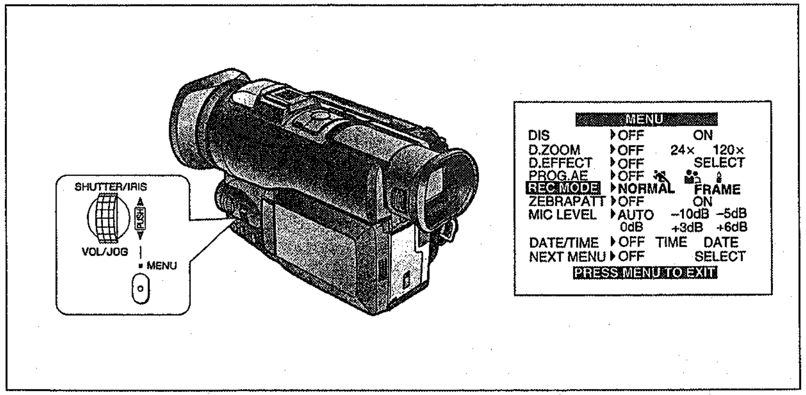
Using the Zebra Pattern makes it easy to adjust the brightness of the picture to an optimum level, even before you start recording.

If you set [ZEBRAPATT] on the Menu to [ON], diagonal white bands (Zebra Pattern) appear on the LCD Monitor or in the Finder on parts of the picture which are overexposed (extremely brightly lit and shiny subjects).

To prevent recording of overexposed, whitish pictures, manually adjust the shutter speed (➜ 86) and/or iris/gain (➜ 88) so that the Zebra Pattern disappears.

However, when recording a person wearing a white shirt, adjust so that the Zebra Pattern over the face just disappears but remains distinctly over the white shirt. If it disappears over the white shirt, the picture becomes too dark.

Of course, the Zebra Pattern is not recorded onto the tape.


SHUTTER/IRIS
PUSH
VOL/JOG
MENU
MENU
DIS ▸OFF ON
D.ZOOM ▸OFF 24× 120×
D.EFFECT ▸OFF SELECT
PROG.AE ▸OFF
REC MODE ▸NORMAL FRAME
ZEBRAPATT ▸OFF ON
MIC LEVEL ▸AUTO –10dB –5dB 0dB +3dB +6dB
DATE/TIME ▸OFF TIME DATE
NEXT MENU ▸OFF SELECT
PRESS MENU TO EXIT

Other Convenient Functions

(Continued)

Recording mode

If you set [REC MODE] on the Menu to [FRAME] for recoding (➜ 126, 128) the still picture can be played back with increased clarity.

NORMAL:	Select this mode for normal recording.
FRAME:	As the pictures are recorded as frames, their vertical resolution is 50% higher than in normal recording. However, fast movements in the picture become somewhat jerky. Use this mode for recoding still pictures that you want to print or import into computer applications.

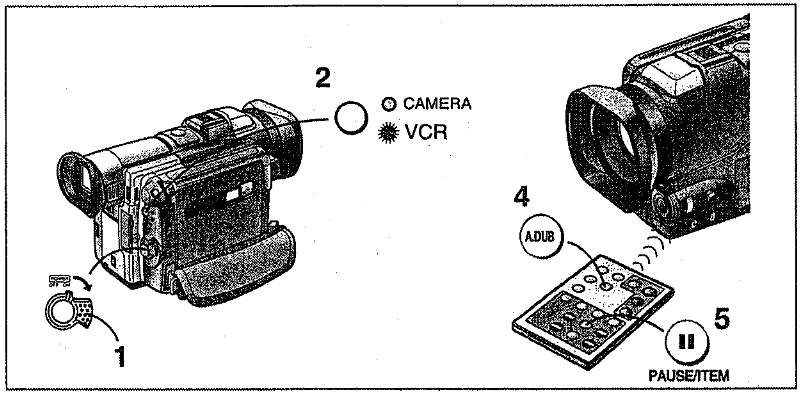
- If you set [REC MODE] to [FRAME], it is not possible to use a digital effect. (➜ 74)

Microphone Sensitivity Level

You can adjust the microphone sensitivity for recording and audio dubbing by selecting a desired setting for [MIC LEVEL] on the Menu (➜ 126) of the Camera Mode Menu or [AUDIO DUB] on the Menu of the VCR Mode Menu (➜ 128).

AUTO:	To record with automatically adjusted optimum level.
-10dB:	To record with reduced volume.
-5dB:	To record with slightly reduced volume.
0dB:	To record the sound with default sensitivity. Loud sounds may become distorted.
+3dB:	To record with slightly increased volume.
+6dB:	To record with increased volume.

- When you set [MIC LEVEL] to any other setting than [AUTO], the Microphone Sensitivity Level Indication, for example [MIC +6dB], may be displayed in red to warn that the sound being recorded is distorted. In this case, select a lower setting for [MIC LEVEL] or set [MIC LEVEL] to [AUTO].
  When recording in the Mirror Mode, the [M] Indication is displayed in red. (However, if you have set [DISPLAY] on the Menu to [OFF], the [M] Indication does not appear.)


2
CAMERA
VCR
4
A.DUB
5
1
PAUSE/ITEM

Adding New Sound on a Recorded Cassette

(Audio Dubbing)

To perform audio dubbing, the Remote Controller is necessary.
You can add music or narration to a recorded cassette.

- **If [AUDIO REC] on the Menu has been set to [16bit], performing audio dubbing will completely erase the previously recorded sound.**
  Therefore, if you intend to perform audio dubbing but also want to keep the original sound, be sure to set [AUDIO REC] on the Menu to [12bit] before making the original recording.
- It is not possible to perform audio dubbing onto recordings made in the LP Mode. (➜ 24)

1. **Insert the recorded cassette and set the [POWER ON/OFF] Switch to [ON].**
2. **Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.**
3. **At the point from which you want to insert the new sound, switch the Movie Camera over to the Still Playback Mode.**
4. **Press the [A.DUB] Button on the Remote Controller.**
5. **Press the Pause Button [❚❚] on the Remote Controller to start audio dubbing.**

Stopping Audio Dubbing
Press the Pause Button [❚❚] on the Remote Controller.
The Movie Camera is again in the Still Playback Mode.

Playing Back the Sound Recorded with Audio Dubbing

- If you set [AUDIO REC] on the Menu to [12bit] for the original recording, the sound added with audio dubbing and the original sound are played back as follows depending on the setting of [AUDIO OUT] on the VCR Mode Menu (→ 126-132):

ST1:	The original sound alone is played back.
ST2:	The dubbed sound alone is played back.
MIX:	The original sound and the sound added with audio dubbing are played back together.

- **Do not perform audio dubbing onto unrecorded parts of the tape. This could cause the playback picture and sound to be distorted.**
- If you reset the Tape Counter to zero at the point where you want the audio dubbing to end and turn on the Memory Stop Function (→ 162), the audio dubbing automatically stops when the tape reaches that point.

Remote Controller

Using the wireless Remote Controller supplied with the Movie Camera allows operating most of the Movie Camera's major functions from a distance.

Buttons on the Remote Controller

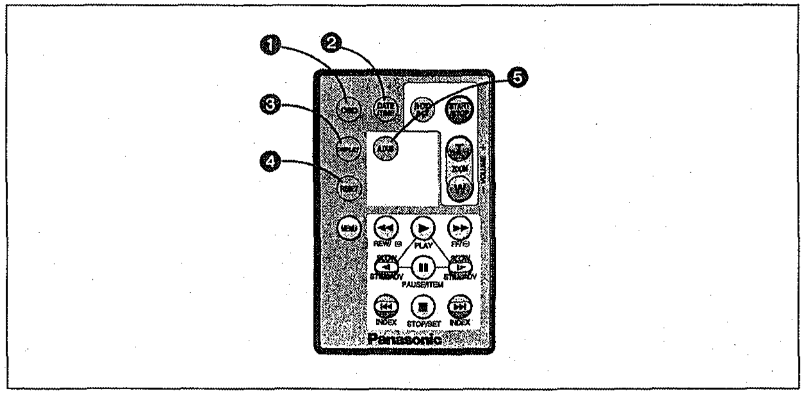
❶ Indication Output Button [OSD] (→ 54)
To display the function and operation indications on a connected TV.

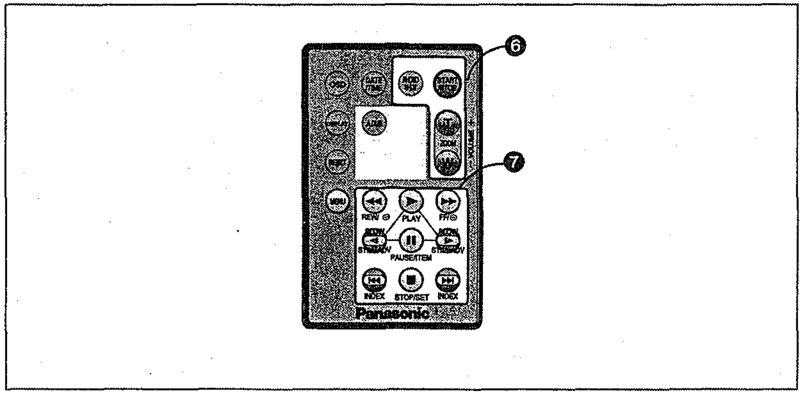
❷ Date and Time Button [DATE/TIME] (→ 46)
To make the Date/Time Indication appear or disappear in the picture during recording and playback.

❸ Indication Shift Button [DISPLAY] (→ 170)
To select the desired Counter Indication.

❹ Reset Button [RESET] (→ 162)
To reset the Tape Counter to zero.

❺ Audio Dubbing Button [A.DUB] (→ 96)
To perform audio dubbing.





❻ Controls for Recording and Sound Volume

Photoshot Button [PHOTO SHOT] (→ 40)
To record still pictures.

Recording Start/Stop Button [START/STOP] (→ 30)
To start and pause recording.

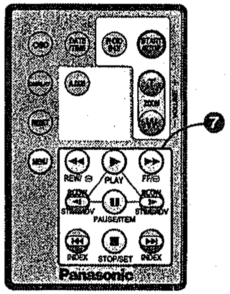
Zoom/Sound Volume Buttons [ZOOM/VOLUME]
To zoom in and out. (→ 38)
To adjust the volume of the playback sound. (→ 46)

❼ Controls for Playback/Menu Setting

Rewind/Review Button [◀◀]
To start review playback (→ 48) if pressed during normal playback; and to rewind the tape if pressed in the Stop Mode.
Also to activate the Camera Search Function (→ 58) in reverse direction if kept pressed in the Recording Pause Mode. Pressing it briefly activates the Recording Check Function (→ 32).

Fast-forward/Cue Button [▶▶]
To start cue playback (→ 48) if pressed during normal playback; and to fast-forward the tape if pressed in the Stop Mode.
Also to activate the Camera Search Function (→ 58) in forward direction if kept pressed in the Recording Pause Mode.

Play Button [▶] (→ 46)
To start playback.



⑦ Slow Motion/Still Advance Button [◀I, I▶] (➔ 50, 52)

To perform Slow Motion Playback if pressed in the Normal Playback Mode; and to perform Still Advance Playback if pressed in the Still Playback Mode.
(◀I: in reverse direction, I▶: in forward direction)

Index Search Button [I◀◀, ▶▶I] (➔ 64, 66)

To search for recorded scenes marked with an index signal and for still images recorded in the Photoshot Mode.
(I◀◀: in reverse direction, ▶▶I: in forward direction)

Stop Button [■] (➔ 46)

To stop the tape.

Pause Button [❚❚] (➔ 52)

To pause playback. The playback picture stands still.

Using the Menu Button [MENU]

Pressing the Menu Button [MENU] displays the Menu. In this case, the functions of the following buttons are changed:

Pause Button → Item Button
To select items on the Menu.

Stop Button → Setting Button
To set the mode for the selected item.

- The iris and the shutter speed cannot be adjusted with the Remote Controller. If you want to adjust them manually, use the [PUSH] Dial on the Movie Camera. (➔ 86, 88)

Remote Controller

(Continued)

■ Inserting the Button-type Battery

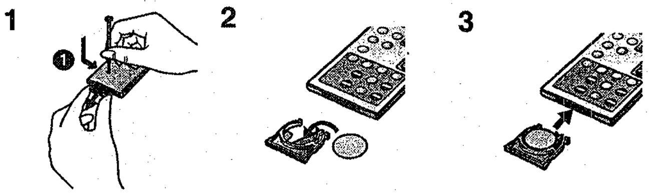
Insert the supplied button-type battery before using the Remote Controller.

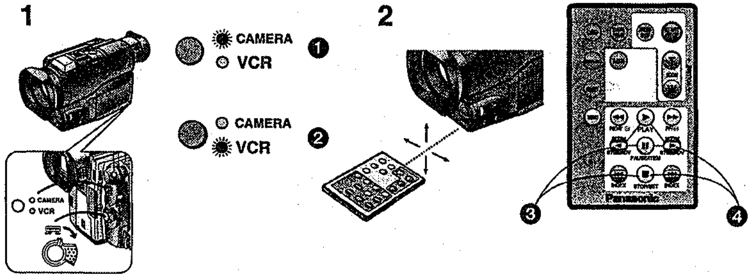
1. **Pull out the Battery Holder while sliding the Stopper with a pointed object in the direction of the arrow ①.**
2. **Insert the button-type battery with the stamped (+) mark facing downward.**
3. **Insert the Battery Holder into the Remote Controller.**

- When the button-type battery is exhausted, replace it with a new CR2025 battery.
  (The life of the battery is about 1 year. However, it depends on the frequency of use.)
- **Keep the button-type battery out of the reach of children.**
- Make sure you insert the battery with its poles correctly aligned.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.





■ Using the Remote Controller

1. **Set the [POWER ON/OFF] Switch on the Movie Camera to [ON].**
   - When the [CAMERA] Lamp lights, you can use the recording functions. ①
   - If you want to use the playback functions, press the [VCR/CAMERA] Button so that the [VCR] Lamp lights. ②
2. **Aim the Remote Controller at the Remote Control Sensor on the Movie Camera and press the appropriate button.**
   Distance to the Movie Camera: Less than 5 metres.
   Angle: Approximately 15° up, down, left and right from centre axis.

- The operative range described above is valid for using the Remote Controller indoors.
  When using it outdoors or under strong lights, it may not work correctly even within the above range.
- Within a distance of about 1 metre, it is also possible to use the Remote Controller from the side (LCD Monitor side).

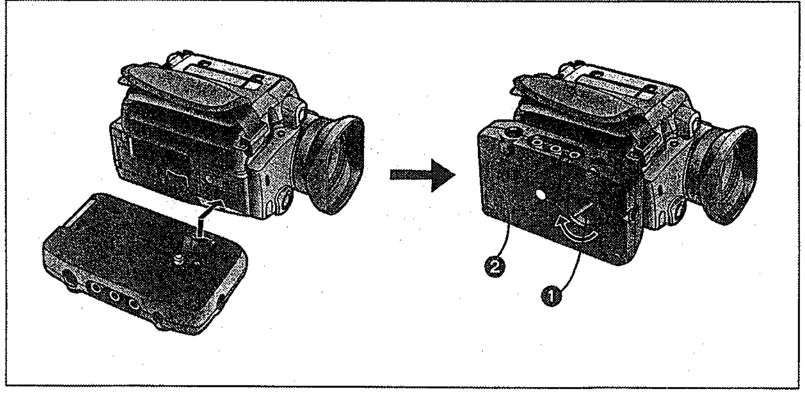
Selecting the Remote Controller Mode

When using two Movie Cameras at the same time, selecting different Remote Controller Modes makes it possible to operate them separately.

- If the Remote Controller Mode set on the Movie Camera and on its Remote Controller are not matched, the [REMOTE] Indication appears.
- Replacing the button-type battery in the Remote Controller automatically resets it to the [VCR1] Mode.
- Set [REMOTE] on the Menu to the desired Remote Controller Mode. (➔ 126-130)

③ **Press the [◀I] Button and the [■] Button simultaneously.**
This selects the [VCR2] Mode.

④ **Press the [I▶] Button and the [■] Button simultaneously.**
This selects the [VCR1] Mode.



Copying onto an S-VHS (VHS) Cassette

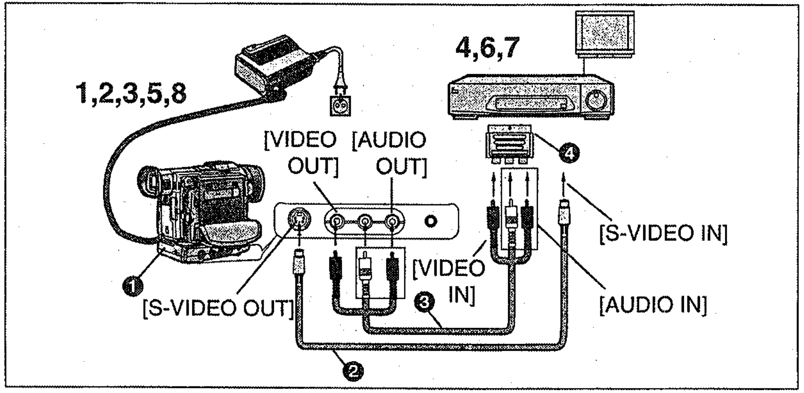
(Dubbing)

If you attach the Output Terminal Box [AV ONE TOUCH STATION], you can copy cassettes recorded with this Movie Camera onto S-VHS or VHS cassettes.

Attaching the Output Terminal Box [AV ONE TOUCH STATION]

1 Attach the Output Terminal Box [AV ONE TOUCH STATION] to the underside of the Movie Camera with the Screw ❶.

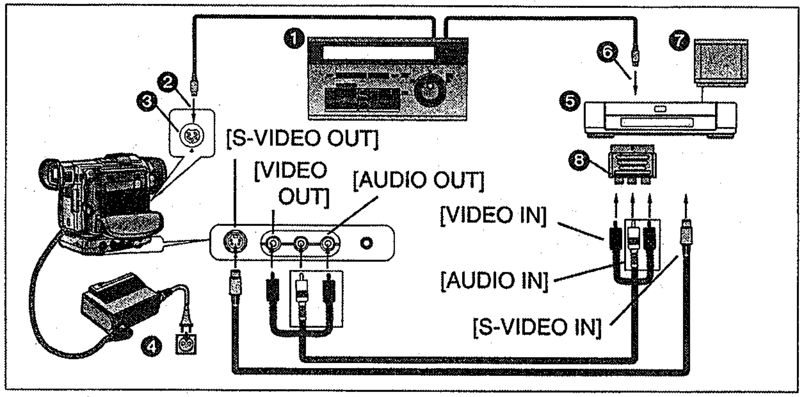
- Before copying, press the [OSD] Button on the Remote Controller (→ 54) so that no indications appear. Otherwise, the Counter Indication and function indications are also recorded onto the cassette.
- Extending the Support Leg ❷ from the underside of the Output Teminal Box [AV ONE TOUCH STATION] makes it easier to view the playback picture on the LCD Monitor.



After connecting all equipment as shown above, perform the following operations:

1. **Movie Camera:**
   Set the [POWER ON/OFF] Switch to [ON].
2. **Movie Camera:**
   Insert the recorded cassette.
3. **Movie Camera:**
   Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.
4. **VCR:**
   Insert an unrecorded cassette with intact erasure prevention tab.
5. **Movie Camera:**
   Press the Play Button [▶] to start playback.
6. **VCR:**
   Start recording.
7. **VCR:**
   Press the Pause or Stop Button to stop recording.
8. **Movie Camera:**
   Press the Stop Button [■] to stop playback.

❶ Output Terminal Box [AV ONE TOUCH STATION]
❷ S-Video Cable
❸ AV Cable
❹ 21-Pin Adaptor



Copying with the Help of an Editing Controller

If you connect the Movie Camera to an Editing Controller equipped with 5-pin Edit Socket, this Movie Camera's playback functions can be controlled from the Editing Controller.
(The Output Terminal Box [AV ONE TOUCH STATION] is necessary.)

When Connecting the Editing Controller VW-EC500E ❶ (optional)

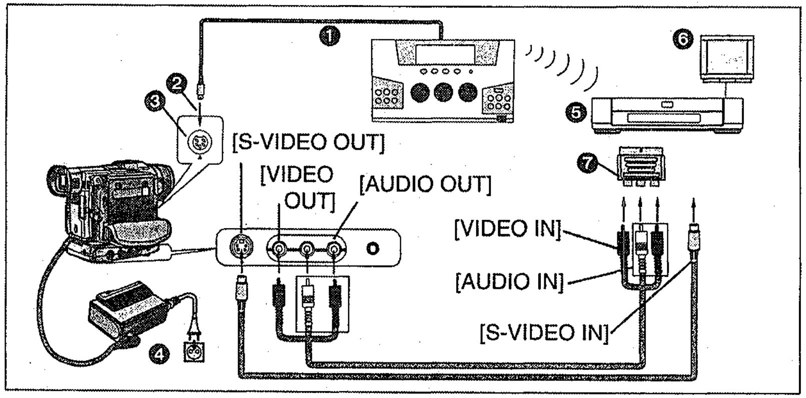
- A VCR equipped with 5-pin Edit Socket is necessary.
- When you connect the VW-EC500E to the Movie Camera, an adjustment on the VW-EC500E is necessary. For the operation of the Editing Controller, refer to its operating instructions.

When Editing with Time Code

Press the [DISPLAY] Button on the Remote Controller to make the Time Code appear.

- When the Time Code is displayed, the Time Code Signal is output from the Edit Socket.
- When the Counter Indication is displayed, the Linear Tape Counter Signal is output.

❷ To Edit Socket
❸ Edit Socket
❹ Connect the AC Adaptor.
❺ VCR (optional)
❻ To Edit Socket
❼ TV (optional)
❽ 21-Pin Adaptor



When Connecting the Editing Controller VW-EC1E (optional)

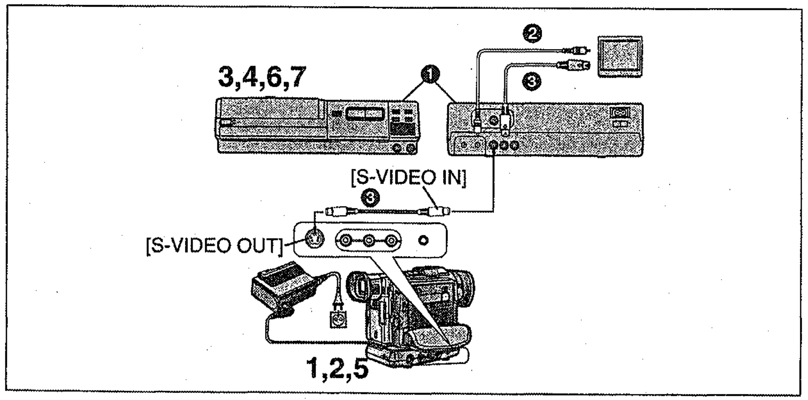
- When you use the Editing Controller VW-EC1E ①, it is not necessary to connect it to the Edit Socket on the VCR, as the VCR's operation is performed via remote controller. Therefore, editing is also possible onto VCRs not equipped with an Edit Socket.
- For the operation of the Editing Controller, refer to its operating instructions.

When Connecting the Editing Controller VW-EC310E to this Movie Camera, such events as described below may occur:

- The editing precision may be bad.
- Editing cannot be performed correctly.

Therefore, we recommend that you use the VW-EC500E or the VW-EC1E as Editing Controller with this Movie Camera.

② To Edit Socket
③ Edit Socket
④ Connect the AC Adaptor.
⑤ VCR (optional)
⑥ TV (optional)
⑦ 21-pin Adaptor



Using the Movie Camera with a Video Printer

If you connect the Movie Camera to a Video Printer, you can print still pictures from scenes recorded with the Movie Camera.

Movie Camera:

1 Set the [POWER ON/OFF] Switch to [ON] to turn the Movie Camera on.

2 Insert a recorded cassette and press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.

5 Press the Play Button [▶].

Video Printer:

3 Turn the Video Printer on.

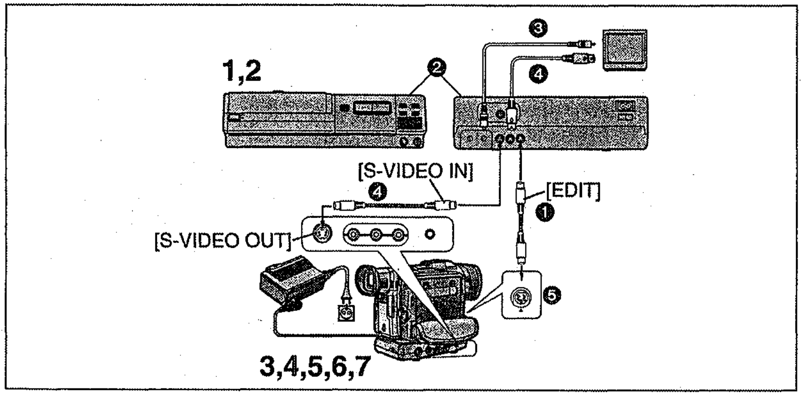
4 If the Video Printer is equipped with Digital Image Stabilizer Function and/or Moving/Still Picture Mode, adjust them according to the picture being input.

6 Store the image in memory.

7 Start printing.

- Read the operating instructions of the Video Printer ①.

② Video Cable (supplied with the Video Printer)
③ S-Video Cables (supplied with the Movie Camera and Video Printer)



Using the Automatic Printing Function (Autoprint)

If you connect the Movie Camera to a Video Printer ② equipped with 5-pin Edit Socket, you can use the Auto Print Function to automatically print still pictures recorded in the Photoshot Function.

Video Printer:

1 Turn the Video Printer on.

2 Make the necessary settings on the Video Printer according to the input signal.

Movie Camera:

3 Set the [POWER ON/OFF] Switch to [ON] to turn the Movie Camera on.

4 Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.

5 Search for the first still picture from which you want to start printing with the Auto Print Function.
If you want to print all still pictures recorded on the cassette, rewind the tape to its beginning.

6 Press the [MENU] Button.

7 Set [AUTOPRINT] on the Menu to [ON].
Automatic printing starts.

- If you want to stop the automatic printing in the middle, press the Stop Button [■] on the Movie Camera.

① Edit Cable VW-K5E (optional)
③ Video Cable (supplied with the Video Printer)
④ S-Video Cables (supplied with the Movie Camera and Video Printer)
⑤ Edit Socket

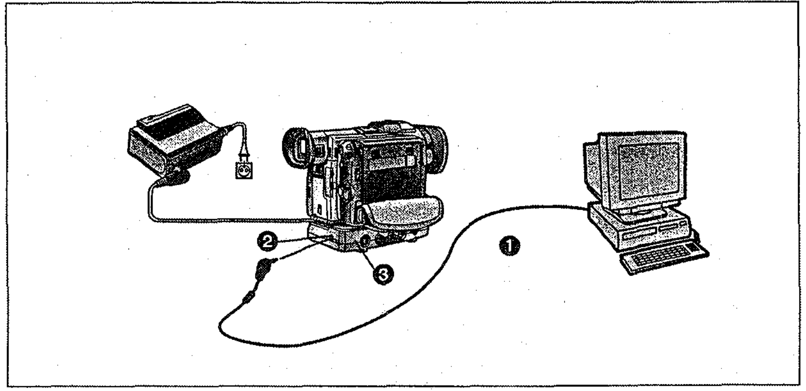
- When the cooling function of the Video Printer is activated and the printing speed slows down, the automatic printing may stop. In this case, set [AUTOPRINT] to [ON] again.

- If you replace the ink cassette or paper during printing, the same picture may be printed twice.

- If still pictures are recorded successively in the Photoshot Mode, some pictures may be skipped during printing.

- Before storing an image in memory on the Video Printer, press the [OSD] Button (➔ 54) on the Remote Controller of the Movie Camera so that no indications appear in the picture. Otherwise, the Counter Indication and other function indications are also printed in the picture.

- In the following cases, some pictures may be skipped when printing with the Auto Print Function.
  - When you print still pictures recorded in the Photoshot Mode on a video camera of another brand.
  - If you turn the Movie Camera on and off several times (3 times or more) between recording two still pictures in the Photoshot Mode.
  - When you record a still picture in the Photoshot Mode on the same part of a cassette where a Photoshot picture was recorded before.
  - When you select a different recording speed (SP/LP) between the recording of two still pictures in the Photoshot Mode.
  - At the first Photoshot Picture to be printed.



Using the Movie Camera with a Computer

The Personal Computer Connection Kit VW-DTA1E (optional) for Digital Video Cameras makes it possible to connect the Movie Camera to a computer and transmit still video images to it. (The Output Terminal Box [AV ONE TOUCH STATION] is also necessary.)

Computer System Requirements

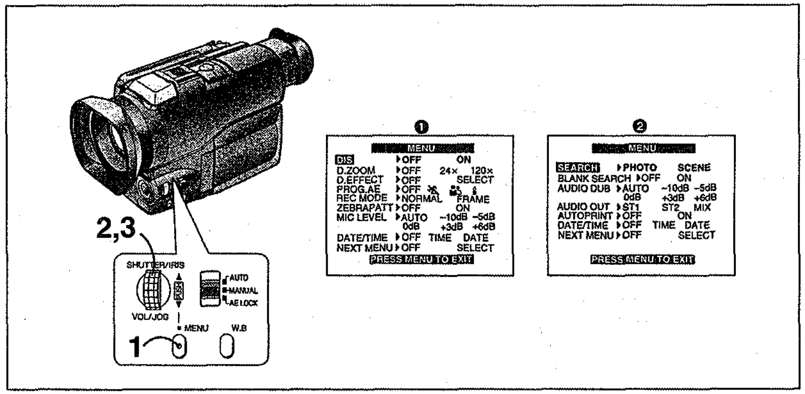
DV STUDIO can be installed in a PC/AT personal computer which can run Microsoft® Windows® 95.

Compatible machines:	Personal computer with 80486DX4 or higher CPU (Pentium™ or higher recommended)
Graphic card:	True Color (approx. 16.7 million colours) recommended (operation also possible even with 256 colours)
Installed memory:	16 MB or more (32 MB or more recommended)
Free hard disk space:	At least 10 MB
Disk drive:	CD-ROM drive
Serial port:	RS-232C (D-sub 9pin)
Other requirements:	Mouse

To connect the Movie Camera to the computer, use the special Interface Adaptor ❶ contained in the Personal Computer Connection Kit.
- Pictures that you intend to import into computer applications should be recorded in the SP Mode.
- When recording, take care that the Time Code is uninterrupted from the beginning of the tape.

- Windows® 95 is a trademark of Microsoft Corporation U.S.A.
- All other company and product names in the operating instructions are trademarks of their respective corporations.

❷ Digital Still Picture Terminal
❸ Output Terminal Box [AV ONE TOUCH STATION]


2,3
SHUTTER/IRIS
VOL/JOG
MENU
W.B
AUTO
MANUAL
AE LOCK
1
❶
MENU
DIS ▸OFF ON
D.ZOOM ▸OFF 24× 120×
D.EFFECT ▸OFF SELECT
PROG.AE ▸OFF
REC MODE ▸NORMAL FRAME
ZEBRAPATT ▸OFF ON
MIC LEVEL ▸AUTO −10dB −5dB 0dB +3dB +6dB
DATE/TIME ▸OFF TIME DATE
NEXT MENU ▸OFF SELECT
PRESS MENU TO EXIT
❷
MENU
SEARCH ▸PHOTO SCENE
BLANK SEARCH ▸OFF ON
AUDIO DUB ▸AUTO −10dB −5dB 0dB +3dB +6dB
AUDIO OUT ▸ST1 ST2 MIX
AUTOPRINT ▸OFF ON
DATE/TIME ▸OFF TIME DATE
NEXT MENU ▸OFF SELECT
PRESS MENU TO EXIT

Using the Menu Screen

This Movie Camera displays the settings of various functions in Menus to make it easy to select the desired functions and settings.

1 Press the [MENU] Button.
The Menu appears.

2 Turn the [PUSH] Dial to select the item to be set.
Turning the [PUSH] Dial changes the highlighted item.

3 Press the [PUSH] Dial to set the selected item to the desired mode.
Every press moves the cursor [▶] to the next mode.

Displaying the Camera Mode Menu ❶

Press the [MENU] Button in the Recording Pause Mode.
- While the Menu is displayed, recording is not possible.
- During recording, displaying the Menu is not possible.

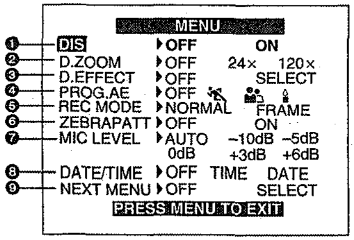
Displaying the VCR Mode Menu ❷

Press the [MENU] Button when the [VCR] Lamp is lit.
- While the Menu is displayed, playback is not possible.
- During playback, displaying the Menu is possible.

Exiting the Menu

Press the [MENU] Button again.

Note About the Settings Made on the Menu
The settings you selected on the Menu are maintained when you turn the Movie Camera off. However, if you disconnect the power supply unit (Battery or AC Adaptor) from the Movie Camera before turning it off, the selected settings may not be maintained.


MENU
❶ DIS ▸OFF ON
❷ D.ZOOM ▸OFF 24× 120×
❸ D.EFFECT ▸OFF SELECT
❹ PROG.AE ▸OFF
❺ REC MODE ▸NORMAL FRAME
❻ ZEBRAPATT ▸OFF ON
❼ MIC LEVEL ▸AUTO −10dB −5dB 0dB +3dB +6dB
❽ DATE/TIME ▸OFF TIME DATE
❾ NEXT MENU ▸OFF SELECT
PRESS MENU TO EXIT

Menu Functions

Camera Mode Menu

❶ **Digital Image Stabilizer [DIS] (→ 44)**

❷ **Digital Zoom [D.ZOOM] (→ 38)**

❸ **Digital Effects [D.EFFECT] (→ 76, 78, 80)**

❹ **Auto Exposure Modes [PROG.AE] (→ 70)**

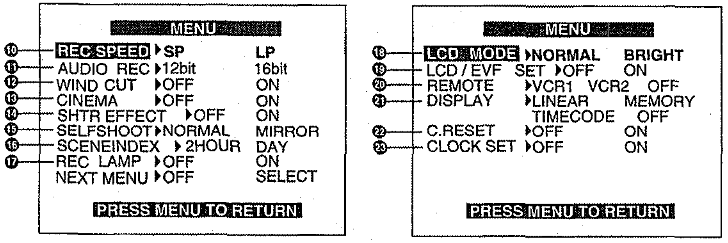
❺ **Recording Mode [REC MODE] (→ 94)**

❻ **Zebra Pattern [ZEBRAPATT] (→ 92)**

❼ **Microphone Sensitivity Level [MIC LEVEL] (→ 94)**

❽ **Date and Time Indication [DATE/TIME] (→ 46)**

❾ **Other Items [NEXT MENU] (→ 130)**
If you set [NEXT MENU] to [SELECT], the next menu appears.


MENU
❿ REC SPEED ▸SP LP
⓫ AUDIO REC ▸12bit 16bit
⓬ WIND CUT ▸OFF ON
⓭ CINEMA ▸OFF ON
⓮ SHTR EFFECT ▸OFF ON
⓯ SELFSHOOT ▸NORMAL MIRROR
⓰ SCENEINDEX ▸2HOUR DAY
⓱ REC LAMP ▸OFF ON
NEXT MENU ▸OFF SELECT
PRESS MENU TO RETURN
MENU
⓲ LCD MODE ▸NORMAL BRIGHT
⓳ LCD / EVF SET ▸OFF ON
⓴ REMOTE ▸VCR1 VCR2 OFF
㉑ DISPLAY ▸LINEAR MEMORY TIMECODE OFF
㉒ C.RESET ▸OFF ON
㉓ CLOCK SET ▸OFF ON
PRESS MENU TO RETURN

❿ **Recording Speed Mode [REC SPEED] (→ 24)**

⓫ **Audio Recording Mode [AUDIO REC] (→ 96)**

⓬ **Wind Buffer [WIND CUT]**
If you set [WIND CUT] to [ON], the noise of the wind hitting the Microphone is reduced. However, this also causes a slight deterioration of the sound reproduction in the bass range.

⓭ **Cinema-like Format Recording [CINEMA] (→ 42)**

⓮ **Shutter Effect [SHTR EFFECT] (→ 40)**

⓯ **Self-Recording [SELFSHOOT] (→ 34)**

⓰ **Scene Index Mode [SCENEINDEX] (→ 62)**

⓱ **Recording Lamp [REC LAMP] (→ 30)**

⓲ **LCD Lighting Mode [LCD MODE] (→ 138)**

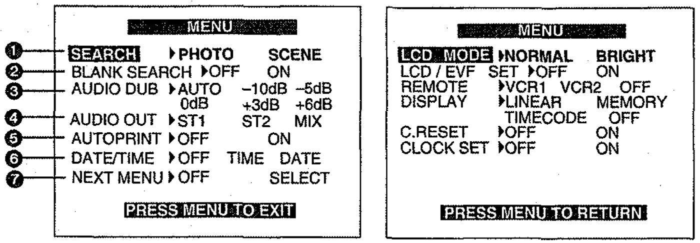
⓳ **LCD and Finder Adjustment [LCD/EVF SET] (→ 138)**

⓴ **Remote Controller Mode [REMOTE] (→ 108)**

㉑ **Counter Display Mode [DISPLAY] (→ 170)**

㉒ **Counter Reset [C.RESET] (→ 162)**
To reset the counter to zero.
However, the Time Code cannot be reset.

㉓ **Date and Time Setting [CLOCK SET] (→ 134)**


MENU
❶ SEARCH ▸PHOTO SCENE
❷ BLANK SEARCH ▸OFF ON
❸ AUDIO DUB ▸AUTO −10dB −5dB 0dB +3dB +6dB
❹ AUDIO OUT ▸ST1 ST2 MIX
❺ AUTOPRINT ▸OFF ON
❻ DATE/TIME ▸OFF TIME DATE
❼ NEXT MENU ▸OFF SELECT
PRESS MENU TO EXIT
MENU
LCD MODE ▸NORMAL BRIGHT
LCD / EVF SET ▸OFF ON
REMOTE ▸VCR1 VCR2 OFF
DISPLAY ▸LINEAR MEMORY TIMECODE OFF
C.RESET ▸OFF ON
CLOCK SET ▸OFF ON
PRESS MENU TO RETURN

VCR Mode Menu

❶ **Index Search [SEARCH] (→ 64, 66)**

❷ **Blank Search [BLANK SEARCH] (→ 60)**

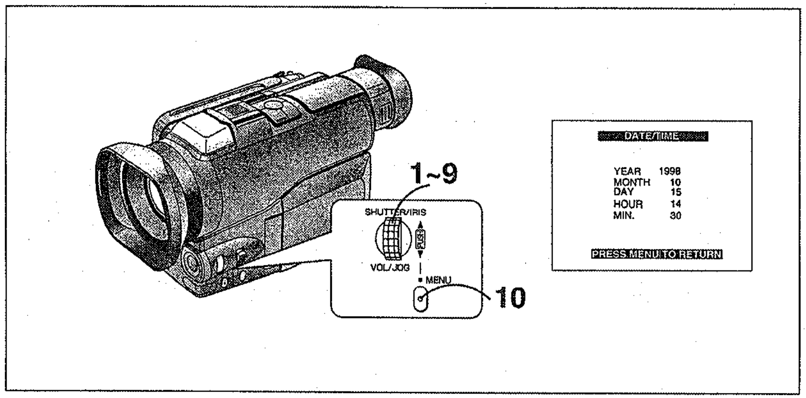
❸ **Microphone Sensitivity Level [AUDIO DUB] (→ 96)**

❹ **Audio Output Mode [AUDIO OUT] (→ 98)**

❺ **Automatic Printing [AUTOPRINT] (→ 120)**

❻ **Date and Time Indication [DATE/TIME] (→ 46)**

❼ **Other Items [NEXT MENU]**
If you set [NEXT MENU] to [SELECT], the next menu appears. This is the same menu as the third menu of the Camera Mode. (→ 130)

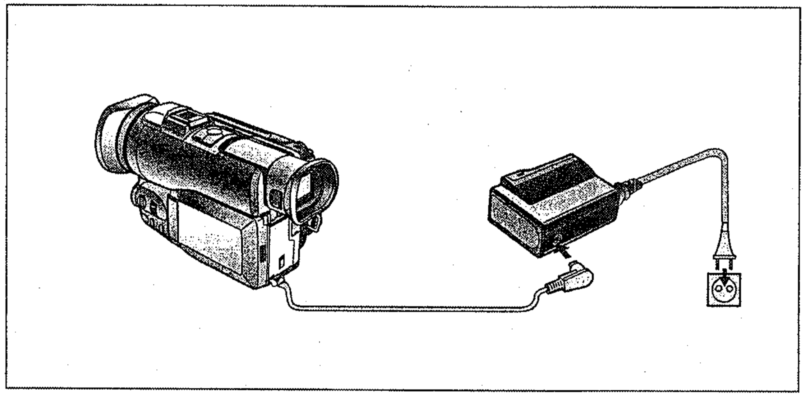

1~9
SHUTTER/IRIS
VOL/JOG
MENU
10
DATE/TIME
YEAR 1998
MONTH 10
DAY 15
HOUR 14
MIN. 30
PRESS MENU TO RETURN

Setting the Date and Time

Selecting [NEXT MENU] on the Menu (either Camera or VCR Mode Menu) and setting [CLOCK SET] to [ON] displays the menu shown above. (➔ 130)

For example: To set the clock to 15th October 1998, 14:30.

1. **Turn the [PUSH] Dial to set to [1998].**
2. **Press the [PUSH] Dial to select [MONTH].**
3. **Turn the [PUSH] Dial to set to [10].**
4. **Press the [PUSH] Dial to select [DAY].**
5. **Turn the [PUSH] Dial to set to [15].**
6. **Press the [PUSH] Dial to select [HOUR].**
7. **Turn the [PUSH] Dial to set to [14].**
8. **Press the [PUSH] Dial to select [MIN.].**
9. **Turn the [PUSH] Dial to set to [30].**
10. **Press the [MENU] Button to finish the date and time setting.**
    The operation of the clock starts from [00] seconds.

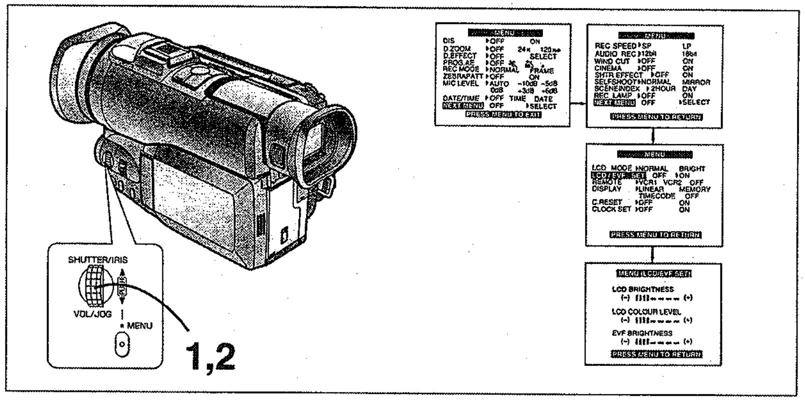


- As small imprecisions in the time indication can occur, we recommend that you confirm that the time shown is correct before you start recording. When the [⊗] Indication appears, charge the built-in battery and set the date and time again.
- The years change in the following order:
  1990 → 1991 → ... → 2089 →1990 →..

Charging the Built-in Battery

The built-in battery maintains the operation of the clock. When the [⊗] Indication appears, the built-in battery is discharged. Charge the discharged battery in the following way and after charging is finished, set the date and time.

1. **Connect the AC Adaptor to the Movie Camera and to an AC mains socket. (➔ 16)**
2. **Leave the Movie Camera turned off.**
3. **Leave the Movie Camera in this condition for approximately 4 hours.**
   After charging for 4 hours, the built-in lithum battery can power the clock for approximately 3 months.


SHUTTER/IRIS
VOL/JOG
MENU
1,2
MENU
DIS ▶OFF ON
D.ZOOM ▶OFF 24× 120×
D.EFFECT ▶OFF SELECT
PROG.AE ▶OFF
REC MODE ▶NORMAL FRAME
ZEBRAPATT ▶OFF ON
MIC LEVEL ▶AUTO -10dB -5dB 0dB +3dB +6dB
DATE/TIME ▶OFF TIME DATE
NEXT MENU OFF ▶SELECT
PRESS MENU TO EXIT
MENU
REC SPEED ▶SP LP
AUDIO REC ▶12bit 16bit
WIND CUT ▶OFF ON
CINEMA ▶OFF ON
SHTR EFFECT ▶OFF ON
SELFSHOOT ▶NORMAL MIRROR
SCENEINDEX ▶2HOUR DAY
REC LAMP ▶OFF ON
NEXT MENU OFF ▶SELECT
PRESS MENU TO RETURN
MENU
LCD MODE ▶NORMAL BRIGHT
LCD/EVF SET OFF ▶ON
REMOTE ▶VCR1 VCR2 OFF
DISPLAY ▶LINEAR MEMORY TIMECODE OFF
C.RESET ▶OFF ON
CLOCK SET ▶OFF ON
PRESS MENU TO RETURN
MENU (LCD/EVF SET)
LCD BRIGHTNESS
(-) (+)
LCD COLOUR LEVEL
(-) (+)
EVF BRIGHTNESS
(-) (+)
PRESS MENU TO RETURN

Adjusting the LCD Monitor

Selecting [NEXT MENU] on the Menu (either Camera or VCR Mode Menu) and setting [LCD/EVF SET] to [ON] displays the following items. (➔ 126-130)

LCD Brightness [LCD BRIGHTNESS]
To adjust the brightness of the LCD screen. The Bar Indication is divided into 8 steps. The more vertical bars are shown, the brighter is the screen.

LCD Colour Level [LCD COLOUR LEVEL]
To adjust the colour saturation of the LCD screen. The Bar Indication is divided into 8 steps. The more vertical bars are shown, the stronger are the colours.

Finder Brightness [EVF BRIGHTNESS]
To adjust the brightness of the Finder. The Bar Indication is divided into 8 steps. The more vertical bars are shown, the brighter is the screen.

1. **Press the [PUSH] Dial to select the item that you want to adjust.**
2. **Turn the [PUSH] Dial. Turning it increases or decreases the number of vertical bars of the Bar Indication.**

Boosting the Brightness of the Whole LCD Monitor

Setting [LCD MODE] on the Menu to [BRIGHT] brightens up the LCD Monitor.

- These adjustments have no influence on the actually recorded picture.

Cautions for Use

Take care that no water enters the Movie Camera when using it in the rain and snow or on the beach.

- The Movie Camera and the cassette could become damaged. (It might not be repairable.)

Keep the Movie Camera away from magnetized equipment (TVs, TV games, etc.).

- If you use the Movie Camera on or near a TV, the electromagnetic radiation may cause picture and sound distortion.
- Strong magnetic fields generated by speakers and large motors may damage the recordings on tape and distort the picture.
- The electromagnetic radiation from micro-computers can adversely influence the Movie Camera and cause picture and sound distortion.
- If the Movie Camera is adversely influenced by magnetized equipment and does not work correctly, turn the Movie Camera off, remove the Battery or disconnect the AC Adaptor and insert the Battery or connect the AC Adaptor again. Then turn the Movie Camera on.

Do not use the Movie Camera near a radio transmitter or high-voltage power line.

- If you record near a radio transmitter or high-voltage power line, the recorded picture and sound may be adversely influenced.

Do not use the Movie Camera for surveillance and other industrial applications.

- If the Movie Camera is being used for a long time, the inside temperature rises and this may cause malfunction.
- This Movie Camera is not designed for industrial use.

Take care that no sand and fine dust enters the Movie Camera when using it on a beach or similar places.

- Sand and dust could damage the Movie Camera and cassette. (Be careful when inserting and removing the cassette.)

Take care not to drop the Movie Camera when carrying it.

- Strong shocks could damage the body of the Movie Camera and cause malfunction.
- When carrying, hold the Movie Camera by the Grip Belt or Shoulder Strap and handle it with care.

Do not spray insecticide or volatile agents on the Movie Camera.

- Such agents could deform the body and cause the surface coating to peel off.
- Do not leave the Movie Camera in direct contact with rubber or plastic products for a long time.

Do not use benzine or thinner for cleaning.

- They could deform the body and cause the surface coating to peel off.
- Before cleaning, remove the Battery or unplug the AC Mains Cable from the AC mains socket.
- Wipe the Movie Camera with a soft, clean cloth. To remove persistent stains, wipe with a cloth moistened with mild detergent diluted with water, and then finish with a dry cloth.

After use, always take out the cassette and remove the Battery or unplug the AC Mains Cable from the AC mains socket.

- If you leave the cassette in the Movie Camera, the tape can become loosened and damaged.
- If you leave the battery in the Movie Camera for a long time, the voltage level may drop very low so that the Battery cannot be used any more even after charging.

■ Condensation

Determining Whether Condensation Has Formed Inside and Remedy for Condensation

If the Condensation Indication flashes after you turn on the Movie Camera, condensation has formed inside the Movie Camera. In this case, the Movie Camera automatically switches off after a few seconds. Remedy as follows:

1. **Take out the cassette.**
   All other functions do not work. Depending on the amount of condensation, it may not be possible to take out the cassette. In this case, wait 2 - 3 hours before taking out the cassette.
2. **Leave the Cassette Compartment open and wait for 2 - 3 hours.**
   The required time depends on the amount of condensation and the ambient temperature.
3. **After 2 - 3 hours, turn the Movie Camera on and check if the Condensation Indication is not displayed.**
   Even if the Condensation Indication is no longer displayed, wait 1 more hour for added safety before using the Movie Camera again.

Pay Attention to Condensation Even Before the Condensation Indication Appears.

- As condensation forms gradually, the Condensation Indication may not appear for the first 10 - 15 minutes after the condensation has formed inside.
- In an extremely cold place, the condensation could freeze and turn into frost. In such a case, it takes an additional 2 - 3 hours for the frost to first melt into condensation and then to be dissolved.

Remedy for a Fogged-up Lens

Set the [POWER ON/OFF] Switch to [OFF] and leave the Movie Camera in this condition for about 1 hour. When the lens has reached about the same temperature as its surroundings, it automatically clears up.

■ Video Head Clogging and Remedy

If the video heads (which contact the tape) are dirty, the playback picture contains rectangular blocks of picture noise or the whole screen becomes blue. If they are very dirty, the recording performance deteriorates and in the worst case, recording may not be possible at all.

Causes of Dirty Video Heads

- A lot of dust in the air.
- High-temperature and high-humidity environment.
- Damaged tape.
- Long-time use.

Periodic Inspection

To ensure optimum picture quality, we recommend that you have worn out parts such as video heads replaced after approximately 1000 hours of use. (However, this depends considerably on the conditions of use such as temperature, humidity and dust.)

■Optimum Use of the Battery

Special Characteristics of the Battery

This Battery is a rechargeable lithium-ion battery. Its ability to generate electric energy is based on an internal chemical reaction. This reaction is easily influenced by ambient temperature and humidity, and the useful operation time that the Battery can provide becomes shorter at high and low temperatures. When used in extremely cold surroundings, the Battery may only be able to provide approximately 5 minutes of operation time. If the Battery becomes extremely hot, a protection function is activated and prevents the use of the Battery for some time.

After Use, Always Take Out the Battery.

Be sure to remove the Battery from the Movie Camera. (If it is left in the Movie Camera, a small amount of electric current is consumed even if the Movie Camera is turned off.) Leaving the Battery inserted in the Movie Camera for a very long time could cause it to become excessively discharged, so that it cannot be used any more even after charging.

Discarding a Battery That Has Become Unusable

- The usable life of the Battery is limited.
- Do not throw the Battery in a fire because it could explode.

Keep the Battery's Terminals Clean.

Be careful that the terminals (the two small round openings) do not get plugged up with dust, dirt or other substances.

If you accidentally drop the Battery, confirm that the Battery itself and the terminals are not deformed. Inserting a deformed Battery in the Movie Camera or attaching it to the AC Adaptor could damage the Movie Camera or the AC Adaptor.

■ Precautions for Storage

Before Storing the Movie Camera, Take out the Cassette and Remove the Battery.
Store all equipment in a dry place where the temperature remains relatively constant.
(Recommended temperature is 15°C - 25°C and recommended relative humidity is 40% - 60%.)

Movie Camera

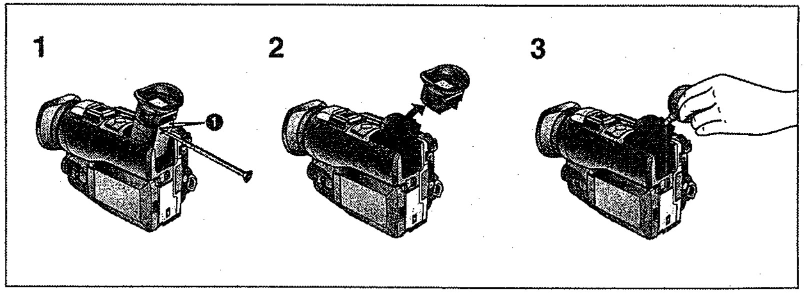
- Wrap it with a soft cloth to prevent dust from entering.

Battery

- Extremely low or high temperature shortens the Battery life.
- Storing it in places with oily smoke and a lot of dust could cause the terminals to get rusty, and this can result in malfunction.
- **Do not allow metal objects (such as necklaces and hair pins) to touch the battery terminals. Short-circuiting may occur and generate heat, and touching it in this condition could inflict serious burns.**
- Store the Battery in discharged condition. If you store the Battery for a long time, we recommend that you charge it once a year and completely use up the charge before storing it again in discharged condition.

Cassette

- Rewind the tape to its beginning before storing. Leaving the cassette with the tape stopped halfway for more than 6 months (depending on the storing condition) loosens the tape. Be sure to rewind it to the beginning.
- Put the cassette in its case to store it.
  Dust, direct sunlight (ultraviolet rays) and humidity could damage the tape. Dust contains hard mineral particles and cassettes with dust damage the video heads and other parts of the Movie Camera. Make it a habit to always put the cassette back into its case.
- Completely wind the tape forward and then rewind it once every half year. Leaving the cassette for more than a year without winding/rewinding it may deform the cassette because of swelling and shrinking of the tape due to changes in temperature and humidity. Also, the tape may stick together.
- Do not place the cassette near strongly magnetized objects or equipment.
- The tape surface is coated with microscopic magnetic particles and they record signals. Such objects as magnetic necklaces and toys have stronger magnetic force than commonly thought, and this could erase the recorded contents and cause noise in picture and sound.



■ LCD Monitor and Lens Hood

LCD Monitor

- In places where big changes in temperature occur, condensation may form on the LCD Monitor. Wipe it with a soft, dry cloth.
- When the Movie Camera is very cold when it is turned on, the LCD Monitor is initially a little darker than normally. However, as the internal temperature rises, the LCD Monitor regains its normal brightness.
- Extremely high precision technology is employed in producing the LCD Monitor. The result is more than 99.99% effective pixels with a mere 0.01% of the pixels inactive or always lit.

Lens Hood

- If you want to attach a filter from the Filter Kit (optional), be sure to first remove the Lens Hood.
  However, during recording in the Cinema Mode with a filter attached, the four corners of the picture may become dark (vignetting effect), when you push the [W/T] Zoom Lever toward [W].

■ Cleaning the Finder

If dust has entered the Finder, clean it in the following way:

1 **Unscrew the screws ❶.**
2 **Remove the Eyecup.**
3 **Remove the dust with a blower brush (not supplied).**
4 **Reattach the Eyecup.**
5 **Tighten the screws ❶.**

■ Repeat Playback

- If you keep the Playback Button [▶] pressed for more than 5 seconds, the Movie Camera switches over to the Repeat Playback Mode and the [R▷] Indication appears. (To cancel the Repeat Playback Mode, set the [POWER ON/OFF] Switch to [OFF].)

Glossary

■ Digital Video System

In the digital video system, picture and sound are converted into digital signals and recorded onto the tape. This completely digital recording allows recording and playback of picture and sound with minimum quality deterioration.
In addition, such data as Time Code, Date and Time are also automatically recorded as digital signals.

Features

- Superior picture resolution
- Excellent signal-to-noise ratio
- Stable pictures
- Minimised quality deterioration in dubbing
- Minimised cross colour distortion
- PCM digital sound
- No picture deterioration in LP Mode
- 6.35 mm-wide tape
- Compact cassette with long recording time
- Minimised quality deterioration in editing
- Time Code editing

Compatibility with S-VHS or VHS Cassettes

As this Movie Camera uses a digital method for recording picture and sound, there is no compatibility with conventional S-VHS or VHS video equipment using analog recording methods.
In addition, the size and shape of the cassette are completely different.

Compatibility with Output Signals

As the video and audio signals output from the audio and video output sockets are analog — the same as in conventional video systems — you can connect this Movie Camera to your S-VHS or VHS VCR or TV for playback.

PCM Digital Sound

For recording of the sound, this Movie Camera offers the choice between two different PCM Audio Recording Modes.

- 16 bit, 48 kHz, 2 channels
- 12 bit, 32 kHz, 4 channels

The "16 bit, 48 kHz, 2 channels" Mode offers superior recording sound quality.
The "12 bit, 32 kHz, 4 channels" Mode lets you record the original sound in stereo on two channels and the dubbed sound in stereo on two separate channels.

Sub Code

The digital recording system offers the added capability of recording sub code containing various data.
The following data is recorded as sub code on this Movie Camera:

- Time code
- Recording date and time
- Index signals for locating still images recorded in the Photoshot Mode
- Index signals for locating the beginning of scenes marked with index signal

■ Focus

If you look at an object through a magnifying glass and move it closer or further away from your eye, you will reach a point where the object becomes clearly visible. Being focused or in focus means that the subject can be seen with optimum clarity and sharpness.

Human Eyes

Human eyes have lenses as well, and when we look at objects at different distances, the shape of these lenses changes automatically so that we can always see these objects clearly.

Movie Camera

The image of the subject enters the Movie Camera through the lens and is converted into an electric signal (video signal) for recording onto magnetic tape. The focus is adjusted either manually or automatically by moving a focusing lens.

Auto Focus Adjustment

The Auto Focus System automatically moves the internal focusing lens forward or backward and adjusts the focus so that the subject can be seen clearly.
The Auto Focus Adjustment has the following characteristics:

- It adjusts until the vertical contours of the subject are as sharp and clean as possible.
- It adjusts the focus on the subjects with strong contrast.
- It adjusts the focus on the subject in the centre of the LCD Monitor or Finder.
  Unlike human eyes, the lens of the Movie Camera cannot instantaneously change the focus from a nearby to a distant subject and vice versa.

For the following subjects and recording situations, the Auto Focus System cannot provide precise adjustment.
Use the Manual Focus Mode instead. (→ 36)

❶ **Recording subjects with a part of it near the Movie Camera and another part far away from it**
As the Auto Focus adjusts on the centre part of the image, it is often impossible to bring the nearby and distant parts of the subject into focus.
When you want to record a person with a distant mountain in the back, it is not possible to focus on both.

❷ **Recording subjects behind glass covered with dirt or dust**
As the focus is adjusted on the dirty glass, the subject behind the glass is out of focus. When recording a subject across a street on which cars are running, the focus may be adjusted on the cars.

❸ **Recording subjects in dark surroundings**
As the amount of light information entering through the lens is greatly reduced, the Movie Camera cannot adjust the focus precisely.

❹ **Recording subjects surrounded by objects with shiny surfaces or much light reflection**
As the Movie Camera adjusts the focus on objects with shiny surfaces or much light reflection, the subject may go out of focus.
Therefore, when recording at a lake or the sea, evening scenes, fireworks, or under special types of lighting, the subject may be out of focus.

❺ **Recording fast-moving subjects**
As the internal focusing lens is moved mechanically, it cannot follow fast-moving subjects without delay. Therefore, subjects like children running back and forth may temporarily go out of focus.

❻ **Subjects with weak contrast**
As the Movie Camera adjusts the focus based on vertical contours in the picture, subjects with little contrast such as a white wall may be out of focus.

■ White Balance Adjustment

While most recording with a Movie Camera is probably done outdoors under sunlight, video recording is also done very often under artificial light sources, both indoors and outdoors. However, each of these light sources gives the subject slightly different colours.

Human Eyes

Human eyes can easily adjust to different kinds of lighting and see an object with the same colours even under different lighting.

Movie Camera

Unlike human eyes, the Movie Camera does not have the innate ability to adapt to changes in lighting, and they influence the colours being recorded. Therefore, depending on the light source, the picture would be recorded with a bluish or reddish tint. To minimise the influence of the lighting on the colours of the subject, an adjustment called White Balance Adjustment is necessary.

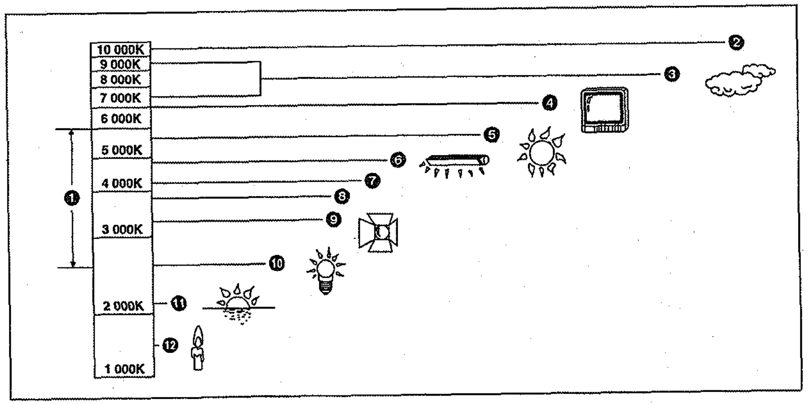
White Balance Adjustment

The White Balance Adjustment determines the colour of the light and adjusts the colours so that white remains pure white. As white is the basic colour of the entire colour spectrum, if white is reproduced correctly, the other colours are correct and natural, too.

Auto White Balance Adjustment

This Movie Camera stores the optimum settings for several common light sources in memory. The Movie Camera judges the recording situation by determining the tint of the light received through the lens and by the White Balance Sensor (→ 14), and it selects the setting for the most similar tint. This function is called Auto White Balance Adjustment.
However, as the white balance settings for only a few light sources are stored in memory, the white balance is not correctly adjusted for other lighting conditions.

For the range of different types of lighting within which the Auto White Balance Function can provide precise adjustment, refer to the chart (→ 160). For recording under lighting conditions outside this range, the Auto White Balance Function does not work correctly, and the recorded picture has a red or blue cast. However, the same also applies, if the subject is lit by more than one light source, even if these light sources are within this range.



■ Colour Temperature

Every light source has its own colour temperature measured in Kelvin (K). The higher the Kelvin value, the more bluish the light; the lower the value, the more reddish the light. The Kelvin value is related to the tint of the light, but not directly to its brightness.
The range ❶ indicated in the illustration above shows the light sources for which this Movie Camera can provide precise white balance adjustment and, therefore, natural colours in the recorded pictures, when using the Full Auto Mode. For light sources outside this range, adjust the white balance manually (→ 84). Also, additional lighting may be necessary.

❶ Control range of this Movie Camera's Auto White Balance Adjustment Mode

❷ Blue sky

❸ Cloudy sky (Rain)

❹ TV screen

❺ Sunlight

❻ White fluorescent lamp

❼ 2 hours after sunrise or before sunset

❽ 1 hour after sunrise or before sunset

❾ Halogen light bulb

❿ Incandescent light bulb

⓫ Sunrise or sunset

⓬ Candlelight

■ Time Code

Time Code signals are the data which indicates the time in hours, minutes, seconds and frames (25 frames/sec). Having this data included in the recording gives every single picture on the tape its own address.

- The time Code is automatically recorded as part of the sub code with every recording you make.
- When you insert a new (previously unrecorded) cassette, the Time Code automatically starts from zero. If you insert a recorded cassette, the Time Code continues where the time code of the last previous scene stopped. (In this case, the zero indication [0h:00m:00s:00f] may appear after inserting the cassette, but when the recording starts, the Time Code records from the previous value.)
- You cannot reset the Time Code to zero.
- In playback modes other than the Normal Playback Mode, the Time Code may not be displayed (or not be correct).
- Unless the Time Code is recorded continuously from the beginning of the tape, precise editing may not be possible. To ensure that the Time Code is recorded without interruption, we recommend that you use the Camera Search Function (→ 58) or Blank Search Function (→ 60) before starting to record a new scene.

■ Memory Stop Function

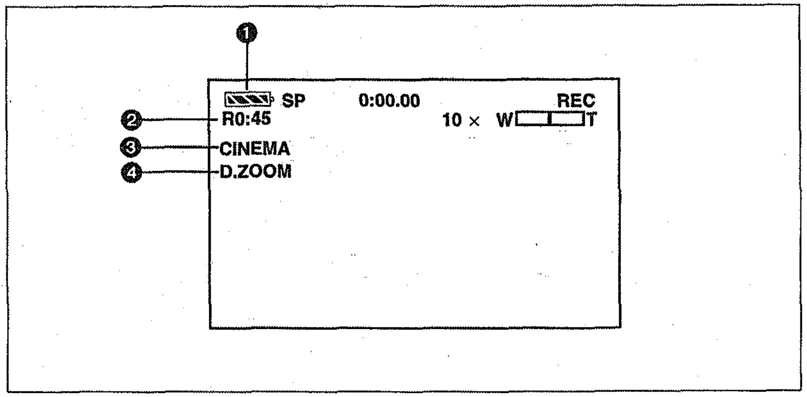
The Memory Stop Function is convenient for the following operations.

Rewinding or fast-forwarding the tape to a desired position

1. **Reset the Tape Counter at the tape position from which you want to play back later.** **(→ 130)**
2. **Set [DISPLAY] on the Menu to [MEMORY].** **(→ 126-132)**
3. **Start playback or recording.**
4. After playback or recording is finished:
   Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.
5. **Rewind the tape.**
   The tape automatically stops approximately at the position at which you reset the counter to zero.

Stopping the editing automatically in the audio dubbing

1. **Reset the Tape Counter to zero at the tape position at which you want the editing to stop.**
2. **Set [DISPLAY] on the Menu to [MEMORY].** **(→ 126-132)**
3. **Play back a still picture at the point at which you want the audio dubbing to start.**
4. **Start the audio dubbing.**
   The audio dubbing automatically stops approximately at the position at which you reset the counter to zero.



Indications on the LCD Monitor/in the Finder

❶ **Remaining Battery Power**
As the remaining battery power decreases, the indication changes as follows:
▮▮▮ → ▮▮ → ▮ → ▯ → ▯
When the battery is completely discharged, the ▯ (▯) indication flashes.
(When you are using the AC Adaptor, the ▮▮▮ indication may appear, however, this has no meaning in this case.)

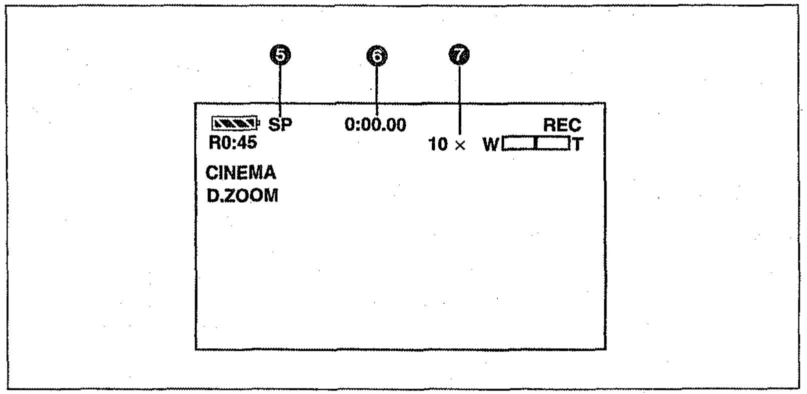
❷ **Remaining Tape Time**
The remaining tape time is displayed in minutes. (When it becomes less than 3 minutes, the indication starts to flash.)

- If a recording lasts less than 15 seconds, the Remaining Tape Time cannot be displayed correctly.
- The displayed remaining tape time may be shorter than the actual remaining tape time.

❸ **Cinema Mode (➜ 42)**
When recording in the Cinema Mode, this indication is displayed.

❹ **Digital Zoom (➜ 38)**
When the Digital Zoom Function is activated, this indication is displayed.

Digital Effects (➜ 74)
When a digital effect is activated, the corresponding indication is displayed.



❺ **Recording Speed Mode (➜ 24)**
The selected Recording Speed Mode is displayed.
SP: Standard Mode
LP: Long-play Mode

❻ **Tape Counter, Time Code (➜ 170)**
The Tape Counter, Memory Stop Function or Time Code Indication is displayed.

❼ **Zoom Magnification (➜ 38)**
When you push the [W/T] Zoom Lever up or down, the Zoom Magnification Indication and the Zoom Gauge are displayed.

Recording Mode
(➜ 30, 36, 70, 82, 84, 86, 88, 90)

AUTO:	This appears when Mode Selector Switch is selected to [AUTO] position.
MNL:	This appears when Mode Selector Switch is selected to [MNL] position.
AE LOCK:	This appears when Mode Selector Switch is selected to [AE LOCK] position.

Digital Image Stabilizer (➜ 44)

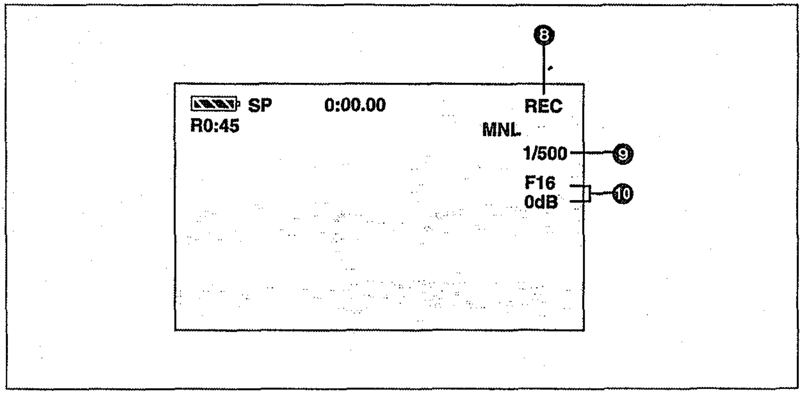
▣:	When the Digital Image Stabilizer Function is activated, this indication is displayed.

Audio Recording Mode (➜ 96)

12bit/16bit:	The indication of the Audio Recording Mode that was selected for recording is displayed during playback.

All Photoshot Pictures Printing (➜ 120)

AUTOPRINT:	This indication is displayed when the Auto Print Function is being used.



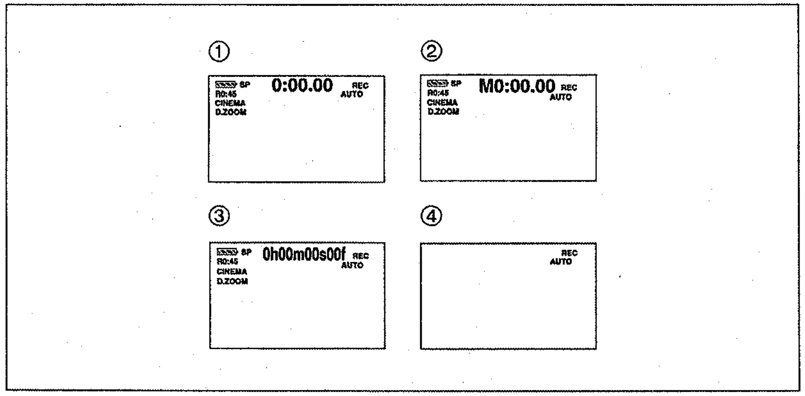
❽ **Tape Run Indications**

REC:	Recording (➜ 30)
PAUSE:	Recording Pause (➜ 30)
▷:	Playback (➜ 46)/Camera Search in forward direction (➜ 58)
◁:	Camera Search in reverse direction (➜ 58)
II:	Still playback (➜ 52)
▷▷:	Fast-forward/Cue playback (➜ 48)
◁◁:	Rewind/Review playback (➜ 46, 48)
I▷ / ◁I :	Slow playback in forward direction/ Slow playback in reverse direction (➜ 50)
II▷ / ◁II:	Still Advance playback in forward direction/Still Advance playback in reverse direction (➜ 52)
▷▷I/I◁◁:	Index Search in forward direction/ Index Search in reverse direction (➜ 64, 66)
CHK:	Recording check (➜ 32)
A.DUB▷:	Audio dubbing (➜ 96)
A.DUB II:	Audio dubbing pause (➜ 96)
PHOTO:	Recording in the Photoshot Mode (➜ 40)
BLANK:	Blank Search (➜ 60)
R▷:	Repeat playback (➜ 150)

- When recording with the LCD Monitor facing forward using the Mirror Mode, Only the Remaining Battery Power Indication, the Recording Indication [●] and the Recording Pause Indication [●II] are displayed.

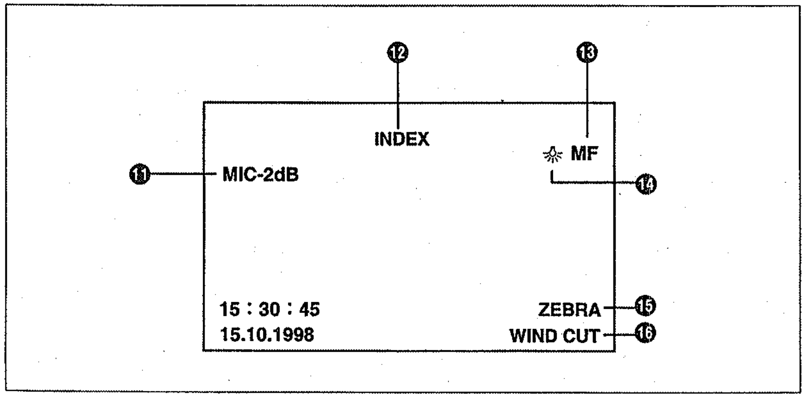
❾ **Shutter Speed**
It appears when you manually adjust the shutter speed. (➜ 86)

❿ **Iris Value (F Number)/Gain-up Value**
It appears when you manually adjust the iris and gain. (➜ 88)



Changing the Indications
By changing the setting for [DISPLAY] on the Menu (→ 126-132) or by repeatedly pressing the [DISPLAY] Button on the Remote Controller (→ 100), the Counter Display Mode can be changed in the order shown in the above illustrations ① to ④:

① Tape Counter Indication
② Tape Counter Indication with activated Memory Stop Indication
③ Time Code Indication
④ No Indication
(In this mode, only the Tape Run Indications, Warning/Alarm Indications, Date/Time Indications, Programme AE Mode Indications, MF Mode Indications, White Balance Mode Indications, and Zoom Magnification Indication can be displayed.)



⑪ **Microphone Sensitivity Level**
This indication shows the selected microphone sensitivity for recording. When it is displayed in red, it indicates that the sound being recorded is distorted.
If you set [MIC LEVEL] (→ 128) on the Camera Mode Menu or [AUDIO DUB] (→ 132) on the VCR Mode Menu to [AUTO], the Microphone Sensitivity Level Indication does not appear.

⑫ **Index (→ 62)**

INDEX:	The [INDEX] Indication flashes for a few seconds while an index signal is being recorded.

Search Number (→ 66)

S1:	The figure indicates which number of scene ahead from the present scene is to be played back.

⑬ **Manual Focus (→ 36)**
If you select the Manual Focus Mode, the [MF] Indication is displayed.
When the Movie Camera is in the Auto Mode, this indication is not displayed.

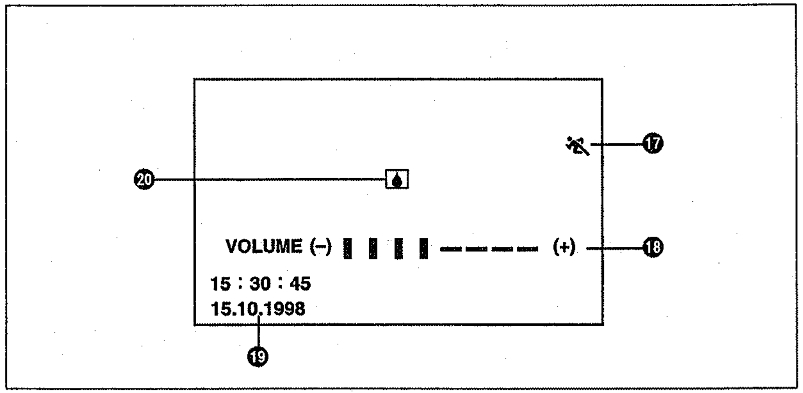
⑭ **White Balance Mode (→ 82)**
The White Balance Mode offers the following possible settings:

☼:	Indoor (Incandescent Lamp) Mode
☀:	Outdoor Mode
▨:	Lock Mode

When the Movie Camera is in the Auto Mode, none of the above 3 indications are displayed.

⑮ **Zebra Pattern**
If you set [ZEBRAPATT] on the Menu (→ 128) to [ON], the [ZEBRA] Indication is displayed.

⑯ **Wind Buffer [WIND CUT]**
If you set [WIND CUT] on the Menu (→ 130) to [ON], the [WIND CUT] Indication is displayed.



⑰ **Programme AE Mode (→ 70)**
The Programme AE Function offers the following settings:

⛷:	Sports Mode
👥:	Portrait Mode
🕯:	Low Light Mode

⑱ **Sound Volume (→ 46)**
Use this indication to adjust the volume of the playback sound from the built-in speaker.
With the [VCR] Lamp lit, keep the [PUSH] Dial pressed until the [VOLUME] Indication appears. The turn the [PUSH] Dial to adjust the volume.

⑲ **Date and Time (→ 46)**
The time is indicated in the 24-hour system.

⑳ **Warning/Alarm**
When any of the following indications lights or flashes, confirm the condition of the Movie Camera.

▣:	Condensation has occurred. (→ 144)
▭:	The erasure prevention slider of the inserted cassette is closed (set to [SAVE]). No cassette is inserted.
▭:	The built-in battery is discharged. (→ 136)
⊗:	The heads are dirty.
▭END:	During recording, the tape has reached its end.
REMOTE:	Wrong Remote Controller Mode is selected. (→ 108)
PRINTER ERROR:	This indication is displayed if you set [AUTOPRINT] on the Menu to [ON] when no printer is connected to the Movie Camera.

Before Requesting Service (Problems & Solutions)

Power Supply

P1: **The Movie Camera does not turn on.**
S1: Is the Battery or the AC Adaptor connected correctly? Confirm the connection. (➔ 16)

P2: **The Movie Camera has turned off automatically.**
S2: If you leave the Movie Camera in the Recording Pause Mode for more than 6 minutes, it automatically switches off to protect the tape and to conserve battery power. (➔ 30)

P3: **The Movie Camera quickly turns off.**
S3-1: Is the Battery discharged? When the Remaining Battery Power Indication is flashing or the [▭] Indication is displayed, the Battery is discharged. Charge the Battery or insert a fully charged Battery. (➔ 18, 164)
S3-2: Has condensation formed? If the Movie Camera is brought from a cold to a warm place, condensation may form inside. In this case, the Movie Camera automatically switches off and no operation can be performed except taking out the cassette. Wait until the Condensation Indication disappears. (➔ 144)

Battery

P1: **The Battery discharges quickly.**
S1-1: Is the Battery fully charged? Charge it until all 4 Charge Lamps on the AC Adaptor light. (➔ 18)
S1-2: Are you using the Battery in a place where the temperature is very low? The ambient temperature greatly influences the Battery's performance. Its operation time becomes shorter in a cold place. (➔ 146)
S1-3: Has the Battery reached the end of its service life? The service life of the Battery is limited. It depends on the way the Battery is used, but when the operation time even after proper charging is too short for normal use, the service life of the Battery has reached its end.

Normal Recording

P1: **Recording cannot be started even though the Movie Camera is supplied with power and the cassette is inserted correctly.**
S1-1: Is the erasure prevention slider of the cassette open? If it is open (set to [SAVE]), recording is not possible. (➔ 22)
S1-2: Has the tape reached its end? Insert a new cassette. (➔ 22)
S1-3: Is the Movie Camera turned on? (➔ 30)
S1-4: Is the [VCR] Lamp lit? If it is lit, recording is not possible. (➔ 46)
S1-5: Is the Condensation Indication [[💧]] displayed? When condensation has formed, no functions except taking out the cassette can be operated. Wait until the Condensation Indication disappears. (➔ 144)

Other Recording

P1: **The picture on the LCD Monitor/in the Finder suddenly stands still for a few seconds.**
S1-1: Did you press the [PHOTO SHOT] Button? If you press the [PHOTO SHOT] Button, a still picture is recorded for approximately 7 seconds. After approximately 7 seconds, the Movie Camera switches back to the Recording Pause Mode. (➔ 40)
S1-2: Did you press the Still Button [❚❚]? If you press the Still Button [❚❚], the picture stands still. Simply press this button again to return to the normal moving picture. (➔ 44)

P2: **The Auto Focus Function does not work.**
S2-1: Is the Manual Focus Mode selected? If you select the Auto Focus Mode, the focus is adjusted automatically. (➔ 36)
S2-2: Is the recording subject or situation suitable for the Auto Focus Mode? The Auto Focus Function does not work correctly for some kinds of subjects and recording situations. In this case, use the Manual Focus Mode to adjust the focus. (➔ 156)

Editing

P1: **Audio dubbing cannot be performed.**
S1-1: Is the erasure prevention slider of the cassette open? If it is open (set to [SAVE]), editing is not possible. (➔ 22)
S1-2: Are you trying to edit parts of the tape recorded in the LP Mode? As the tracks recorded in the LP Mode are narrower than the heads, audio dubbing is not possible. (➔ 24)

Indications

P1: **The Time Code becomes incorrect.**
S1: In the Slow Motion Playback Mode in reverse direction, the counter of the Time Code Indication may not be stable, however, this is not a malfunction.

P2: **The Remaining Tape Time Indication disappears.**
S2: If you record a still picture in the Photoshot Mode, the Remaining Tape Time Indication disappears temporarily. However, if you switch the Movie Camera over to the Normal Recording Mode, it appears again.

P3: **The Remaining Tape Time Indication does not match the actual remaining tape time.**
S3-1: If scenes of less than 15 seconds are recorded successively, the remaining tape time is not indicated correctly.
S3-2: The Remaining Tape Time Indication may show a remaining tape time that is 2 - 3 minutes shorter than the actual remaining tape time.

Playback (Picture)

P1: **No playback picture is reproduced when pressing the Play Button [▶].**
S1: Did you press the [VCR/CAMERA] Button so that the [VCR] Lamp lights? When the [VCR] Lamp is not lit, no playback functions can be operated. (➔ 46)

P2: **Mosaic-like patterns appear in the picture during Cue, Review or Slow Motion Playback.**
S2: This phenomenon is a characteristic of the digital video system. This is not a malfunction. (➔ 48)

P3: **I want to play back the picture on a TV.**
S3: If you attach the Output Terminal Box [AV ONE TOUCH STATION] to the Movie Camera, you can connect the Movie Camera to a TV. (➔ 54)

P4: **The Movie Camera is correctly connect to a TV, but no playback picture is reproduced.**
S4: Did you select "Video Input" on the TV? Carefully read the operating instructions for your TV and select the channel that matches the input sockets used for connection.

P5: **The playback picture is not reproduced clearly.**
S5: Are the video heads on the Movie Camera dirty? If the video heads are dirty, the picture cannot be played back clearly.

Playback (Sound)

P1: **No sound is played back from the Movie Camera's built-in speaker.**
S1: Is the volume set too low? With the [VCR] Lamp lit, keep the [PUSH] Dial pressed until the [VOLUME] Indication appears. Then turn the [PUSH] Dial to adjust the volume. (➔ 46)

P2: **Different sounds are played back together.**
S2: Is [AUDIO OUT] set to [MIX] on the VCR Mode Menu? If you have performed audio dubbing on a cassette for which you set [AUDIO REC] to [12bit] for recording, the original sound and the sound dubbed with audio dubbing are played back together. It is also possible to play them back individually. (➔ 98)

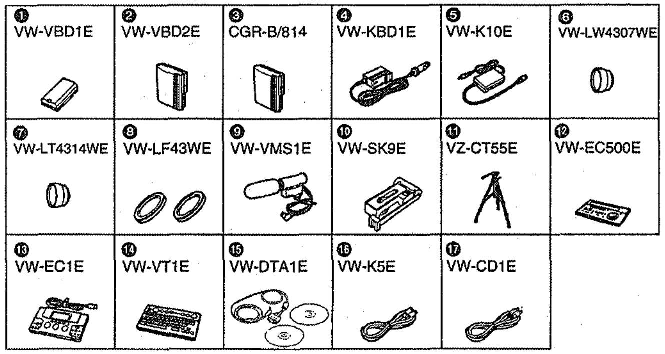
P3: **The original sound was erased by performing audio dubbing.**
S3: If you perform audio-dubbing on a recording made in the [16bit] Mode (➔ 96), the original sound is erased. If you want to keep the original sound, be sure to select the [12bit] Mode for the original recording.

Others

P1: **The cassette cannot be taken out.**
S1: Is the Movie Camera supplied with power? Is the AC Adaptor correctly connected or the Battery correctly inserted? To remove the cassette, the Movie Camera must be supplied with power, however, it is not necessary to set the [POWER ON/OFF] Switch to [ON].

P2: **No operation except taking out the cassette can be performed.**
S2: Is the Condensation Indication [[💧]] displayed? If condensation has formed inside the Movie Camera, it automatically switches off and prevents any operation except taking out the cassette. Wait until the Condensation Indication disappears. (➔ 144)

P3: **The Remote Controller does not work.**
S3-1: Is the button-type battery in the Remote Controller exhausted? If the Remote Controller does not work when you use it near the Remote Controller Sensor on the Movie Camera, the button-type battery is exhausted. Replace it with a new battery. (➔ 106)
S3-2: Is the correct Remote Controller Mode selected? If the Movie Camera's setting for [REMOTE] on the Menu and the mode selected on the Remote Controller are not matched, operating the Movie Camera with the Remote Controller is not possible and the [REMOTE] Indication is displayed. (➔ 108)


①
VW-VBD1E
②
VW-VBD2E
③
CGR-B/814
④
VW-KBD1E
⑤
VW-K10E
⑥
VW-LW4307WE
⑦
VW-LT4314WE
⑧
VW-LF43WE
⑨
VW-VMS1E
⑩
VW-SK9E
⑪
VZ-CT55E
⑫
VW-EC500E
⑬
VW-EC1E
⑭
VW-VT1E
⑮
VW-DTA1E
⑯
VW-K5E
⑰
VW-CD1E

Optional Accessories

① Battery Pack (Lithium)

② Battery Pack (Lithium, Large Capacity)

③ Battery Pack (Lithium, Large Capacity)

④ Car Battery Charger

⑤ 5-Pin Synchro Cord

⑥ Wide Conversion Lens

⑦ Tele Conversion Lens

⑧ Filter Kit

⑨ Stereo Zoom Microphone

⑩ Shoe Adaptor

⑪ Tripod

⑫ Editing Controller

⑬ Editing Controller

⑭ Video Titler

⑮ Personal Computer Connection Kit

⑯ Edit Cable

⑰ DV Cable

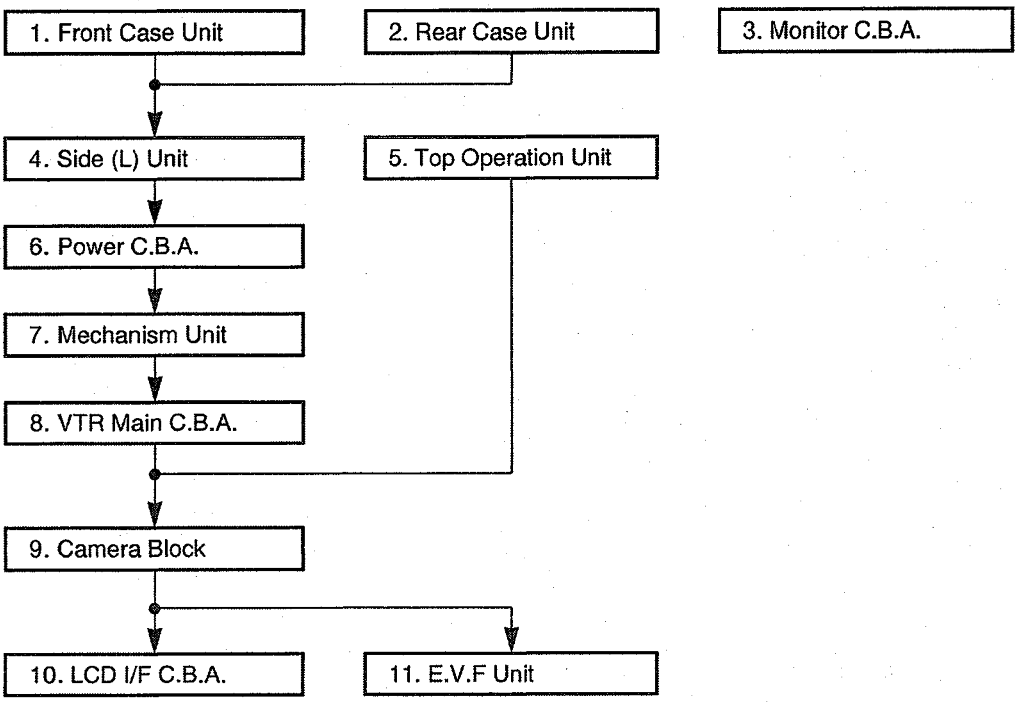
- Some accessories are not available in some countries.

Memo

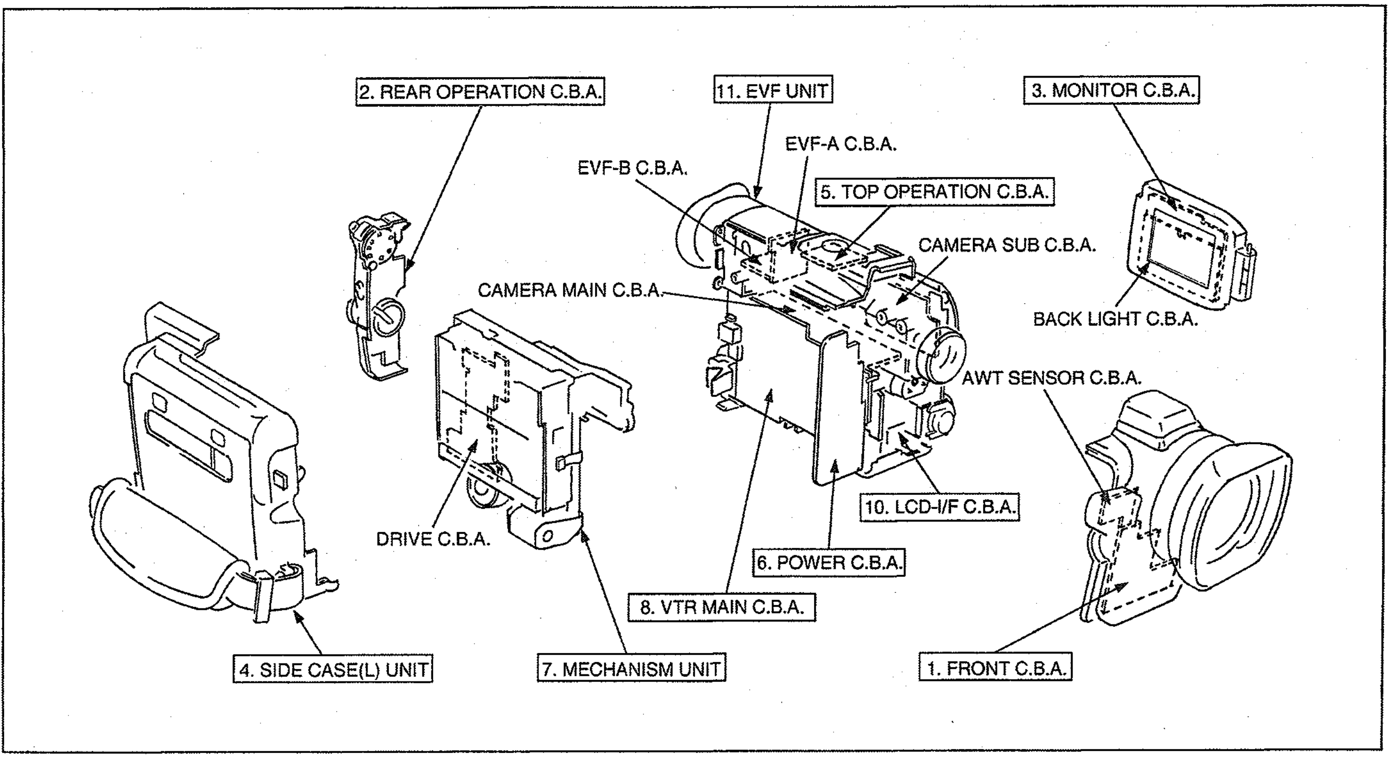
SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLE FLOW CHART

This flow chart indicates the disassembly steps the cabinet parts, C.B.A. and Mechanism Unit in order to access to items to be serviced. When reinstalling, perform the steps in the reverse order.



1. Front Case Unit
2. Rear Case Unit
3. Monitor C.B.A.
4. Side (L) Unit
5. Top Operation Unit
6. Power C.B.A.
7. Mechanism Unit
8. VTR Main C.B.A.
9. Camera Block
10. LCD I/F C.B.A.
11. E.V.F Unit



2. REAR OPERATION C.B.A.
11. EVF UNIT
3. MONITOR C.B.A.
EVF-A C.B.A.
EVF-B C.B.A.
5. TOP OPERATION C.B.A.
CAMERA SUB C.B.A.
CAMERA MAIN C.B.A.
BACK LIGHT C.B.A.
AWT SENSOR C.B.A.
10. LCD-I/F C.B.A.
DRIVE C.B.A.
6. POWER C.B.A.
8. VTR MAIN C.B.A.
4. SIDE CASE(L) UNIT
7. MECHANISM UNIT
1. FRONT C.B.A.

2-2. DISASSEMBLY PROCEDURES

Flow-chart Disassembly procedure

No.	ITEM / PART	FIG.	REMOVAL (SCREW & Other)
1	FRONT CASE UNIT	Fig. 1 Fig. 2	Remove the Shoe Adapter Cover. 4-SCREW (A/B/C) 4-SCREW (D/E/F) Remove the Front Case Unit. Disconnect the 2-Flex Cables. (FP4801/FP4902: Behind of Front Case Unit.)
2	REAR CASE UNIT	Fig. 3	7-SCREW (H/I/J/K/L) Remove the Rear Case Unit. Disconnect the 1-Flex Cables. (FP6701) Note: SCREW was located under the DV Cover.
3	MONITOR C.B.A.	Fig. 4 Fig. 5	2-SCREW (M) 2-SCREW (N) 5-CONNECTORS (P901/FP901/FP903/FP904/FP905)
4	SIDE CASE (L) UNIT	Fig. 6 Fig. 7	3-SCREW (O) Remove the Grip Cover. 3-SCREW (P/Q) 2-SCREW CAP/2-SCREWS (R) CASSETTE COVER 1-SCREW (S) Remove the Side Case (L) Unit.
5	TOP OPERATION UNIT	Fig. 8	TOP OPERATION UNIT 1-CONNECTOR (FP6801)
6	POWER C.B.A.	Fig. 9	1-SCREW (T) 1-SCREW (U) 2-CONNECTORS (FP1001/PP1001)
7	MECHANISM UNIT	Fig. 10 Fig. 11	2-SCREW (V/W) & EVR COVER 1-SCREW (X) 1-CONNECTOR (PP2001) 1-CONNECTOR (FP3201) 2-SCREW (Y)
8	VTR MAIN C.B.A.	Fig. 12	2-SCREW (Z) 4-CONNECTORS (P3001/PS3001/PS3002/PP3002) Unlocked 1 Locking Tab.
9	CAMERA BLOCK	Fig. 13	3-SCREW (a/b) 1-CONNECTOR (FP305 from Side Case (R).)
10	LCD-I/F C.B.A.	Fig. 14	6-SCREW (c/d/e) 3-CONNECTORS (From EVF/Side Case (R).)
11	EVF UNIT	Fig. 15 Fig. 16	4-SCREW (f/g) SPEAKER UNIT 4-SCREW (h/i)

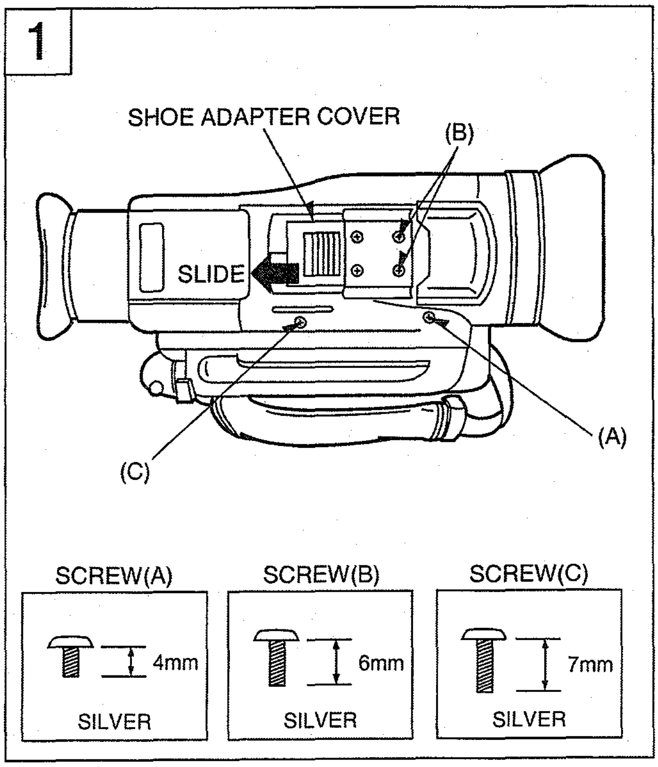

1
SHOE ADAPTER COVER
(B)
SLIDE
(A)
(C)
SCREW(A)
4mm
SILVER
SCREW(B)
6mm
SILVER
SCREW(C)
7mm
SILVER

Fig. 1

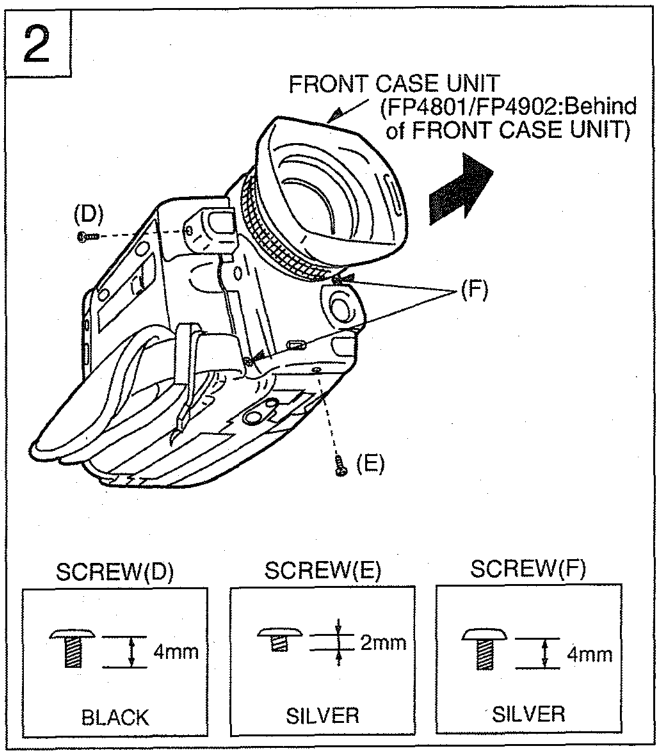

2
FRONT CASE UNIT
(FP4801/FP4902:Behind of FRONT CASE UNIT)
(D)
(F)
(E)
SCREW(D)
4mm
BLACK
SCREW(E)
2mm
SILVER
SCREW(F)
4mm
SILVER

Fig. 2

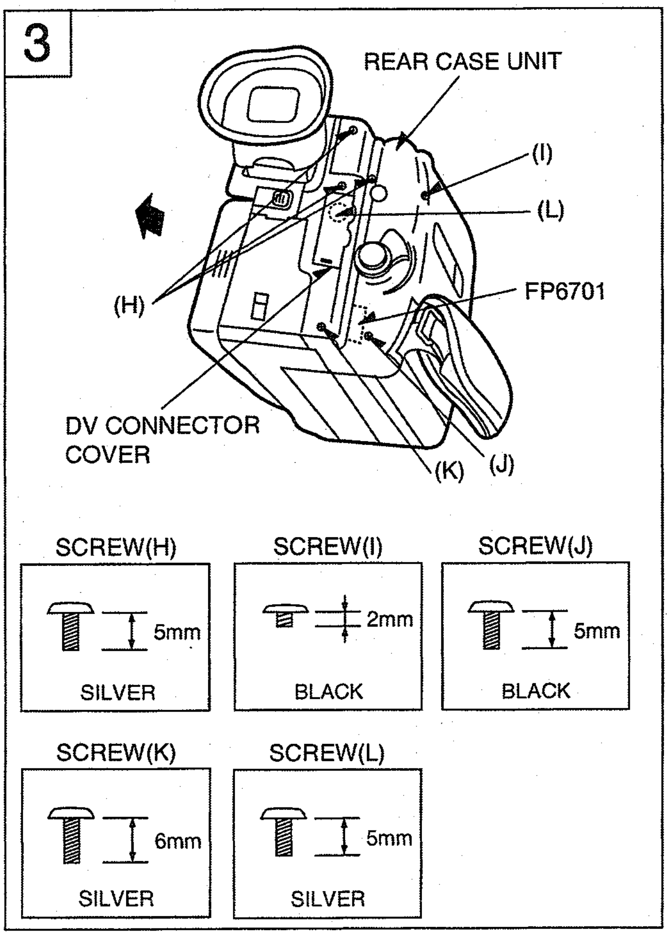

3
REAR CASE UNIT
(I)
(L)
(H)
FP6701
DV CONNECTOR COVER
(K)
(J)
SCREW(H)
5mm
SILVER
SCREW(I)
2mm
BLACK
SCREW(J)
5mm
BLACK
SCREW(K)
6mm
SILVER
SCREW(L)
5mm
SILVER

Fig. 3

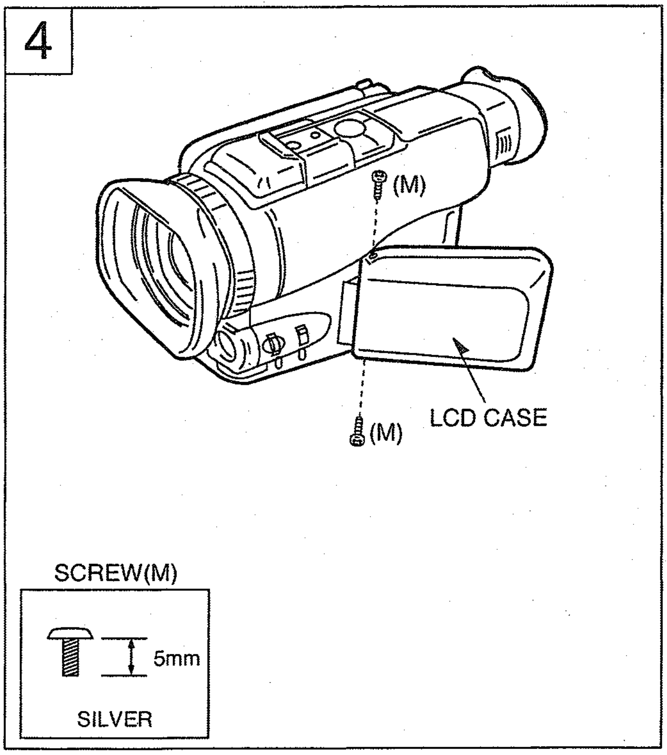

4
(M)
(M)
LCD CASE
SCREW(M)
5mm
SILVER

Fig. 4

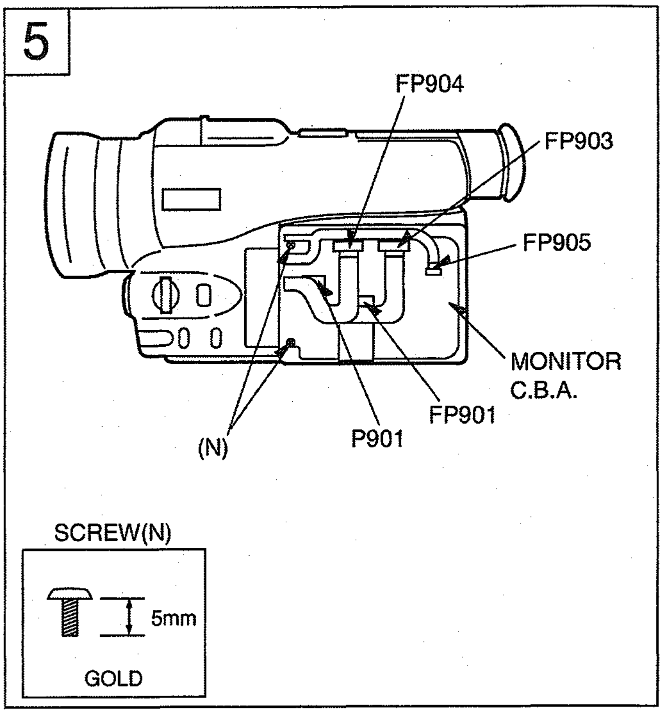

5
FP904
FP903
FP905
MONITOR C.B.A.
FP901
P901
(N)
SCREW(N)
5mm
GOLD

Fig. 5

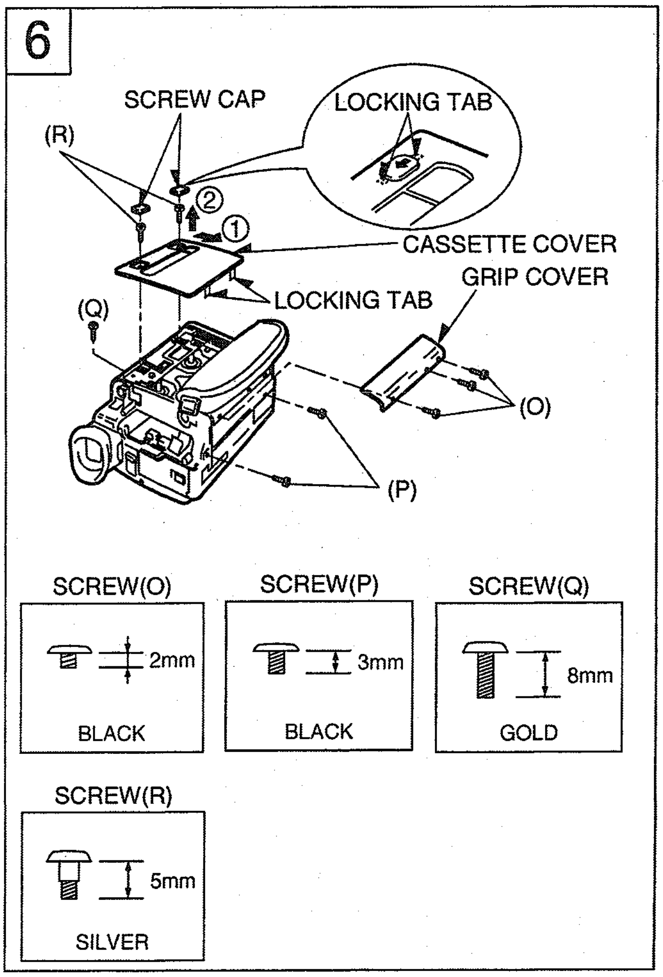

6
SCREW CAP
LOCKING TAB
(R)
②
①
CASSETTE COVER
GRIP COVER
LOCKING TAB
(Q)
(O)
(P)
SCREW(O)
2mm
BLACK
SCREW(P)
3mm
BLACK
SCREW(Q)
8mm
GOLD
SCREW(R)
5mm
SILVER

Fig. 6

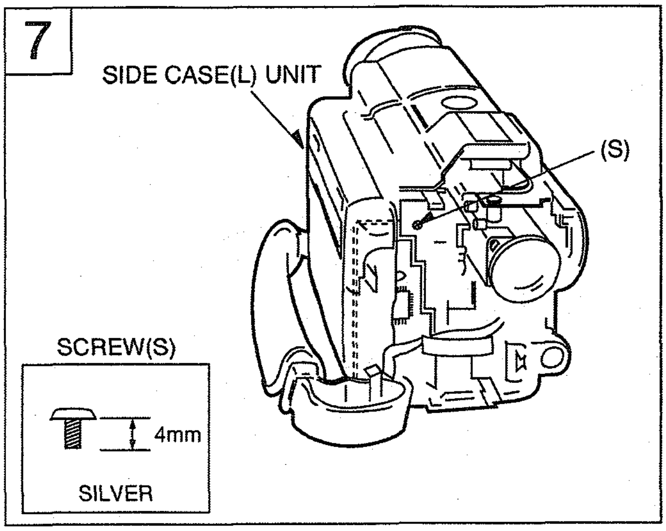

7
SIDE CASE(L) UNIT
(S)
SCREW(S)
4mm
SILVER

Fig. 7

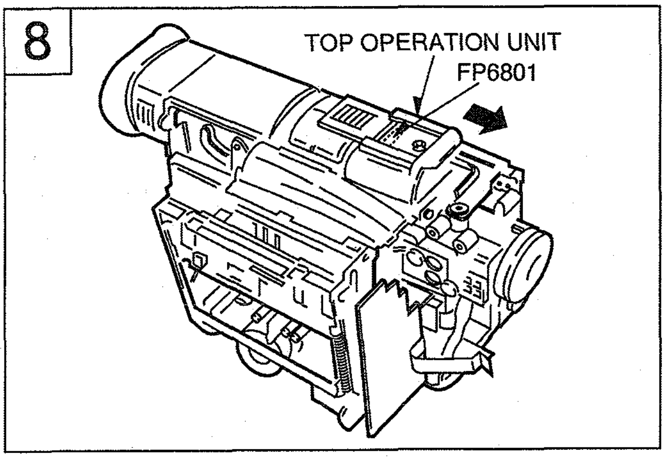

8
TOP OPERATION UNIT
FP6801

Fig. 8

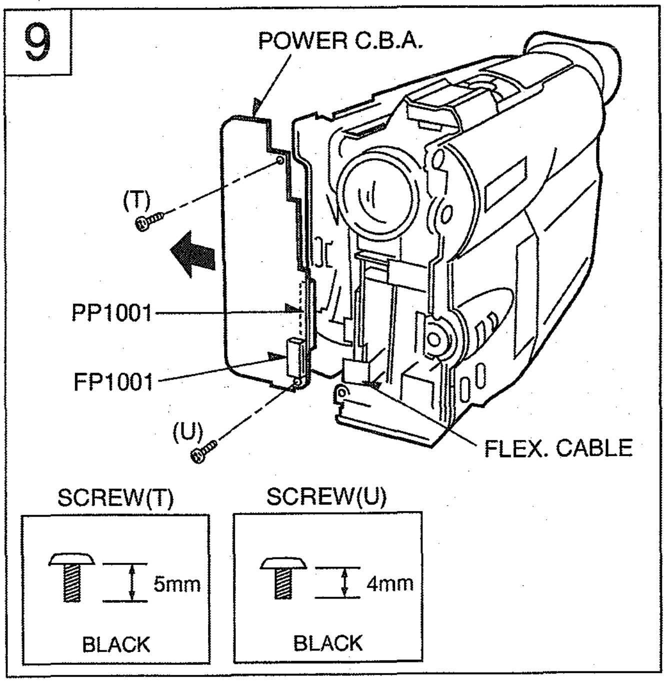

9
POWER C.B.A.
(T)
PP1001
FP1001
(U)
FLEX. CABLE
SCREW(T)
5mm
BLACK
SCREW(U)
4mm
BLACK

Fig. 9

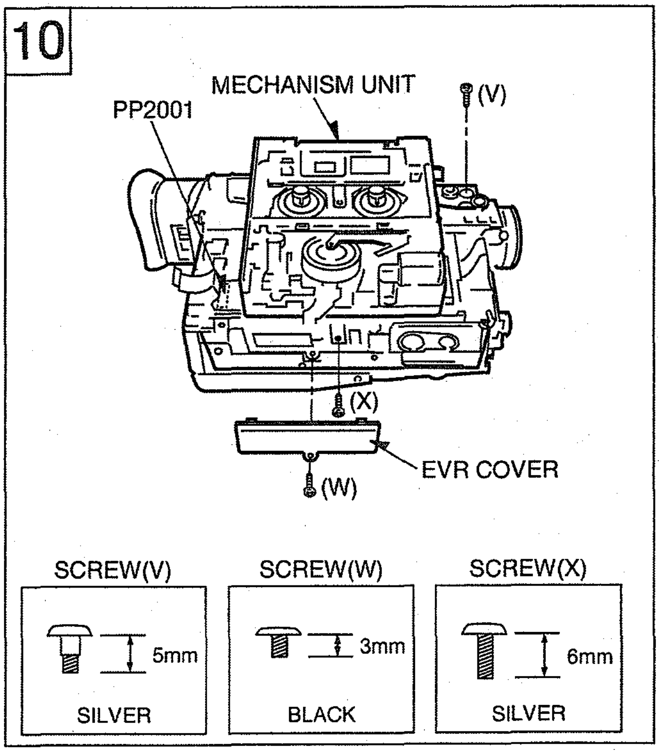

10
MECHANISM UNIT
PP2001
(V)
(X)
EVR COVER
(W)
SCREW(V)
5mm
SILVER
SCREW(W)
3mm
BLACK
SCREW(X)
6mm
SILVER

Fig. 10

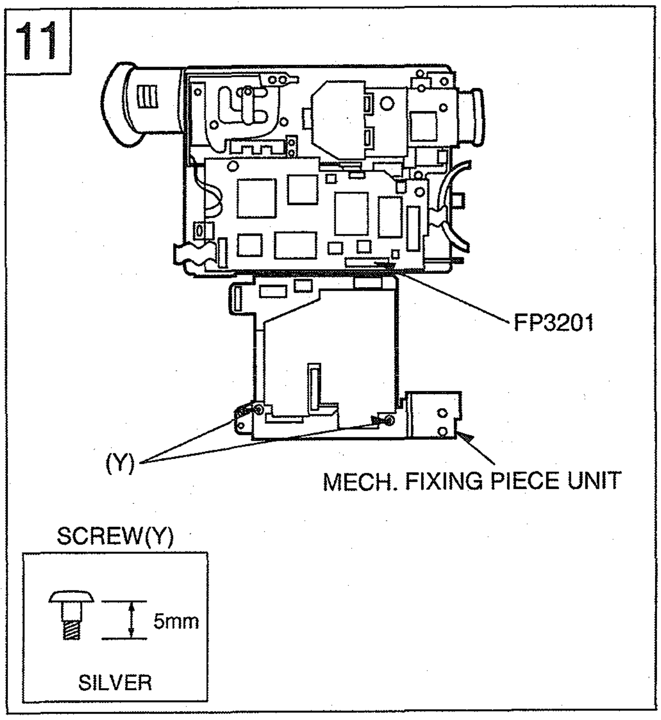

11
FP3201
(Y)
MECH. FIXING PIECE UNIT
SCREW(Y)
5mm
SILVER

Fig. 11

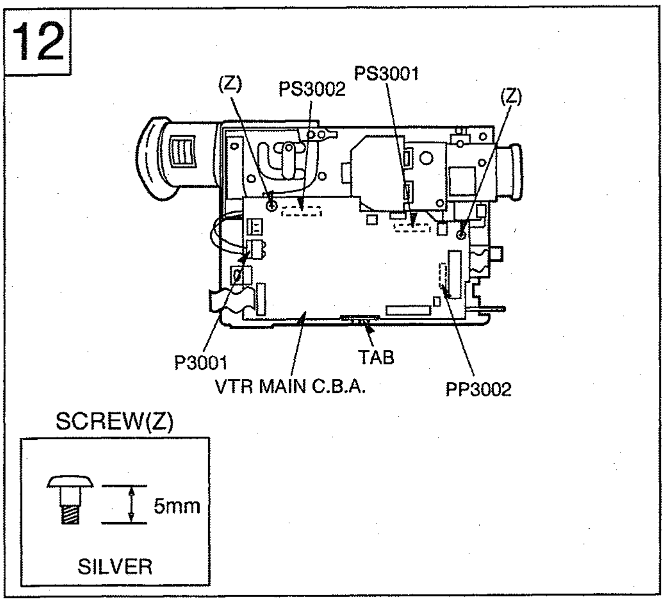

12
(Z)
PS3002
PS3001
(Z)
P3001
TAB
VTR MAIN C.B.A.
PP3002
SCREW(Z)
5mm
SILVER

Fig. 12

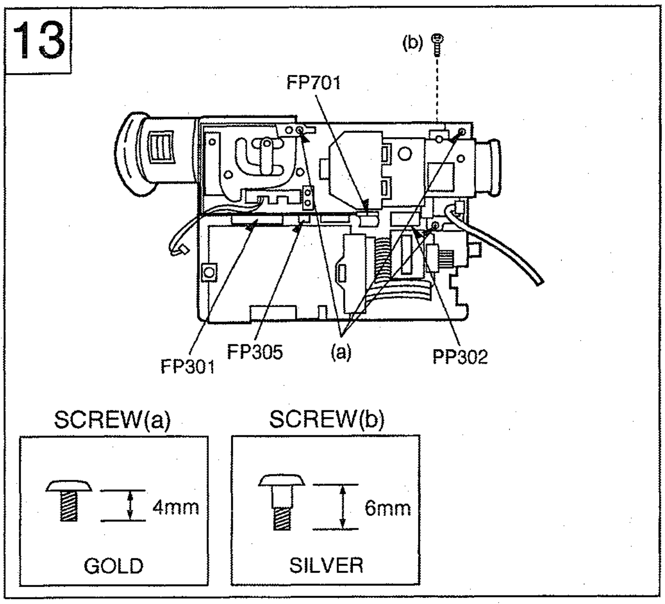

13
(b)
FP701
FP301
FP305
(a)
PP302
SCREW(a)
4mm
GOLD
SCREW(b)
6mm
SILVER

Fig. 13

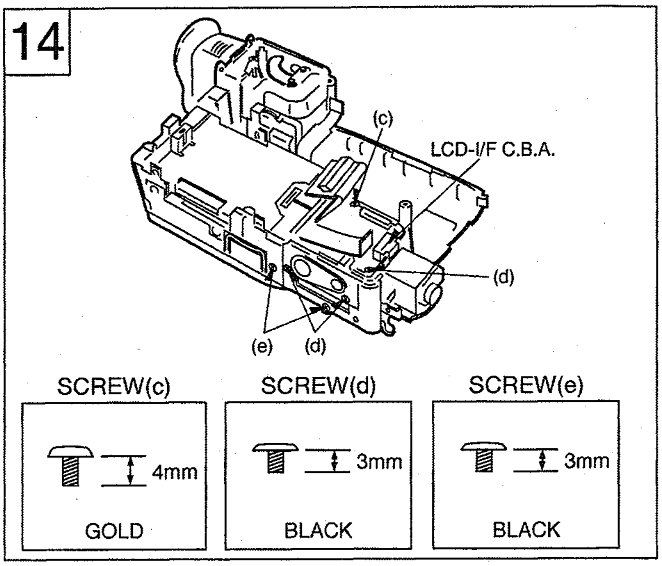

14
(c)
LCD-I/F C.B.A.
(d)
(e)
(d)
SCREW(c)
4mm
GOLD
SCREW(d)
3mm
BLACK
SCREW(e)
3mm
BLACK

Fig. 14

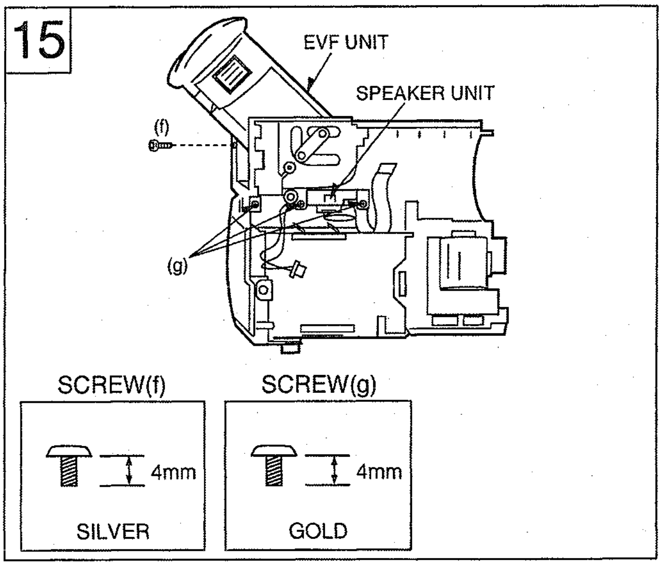

15
EVF UNIT
SPEAKER UNIT
(f)
(g)
SCREW(f)
4mm
SILVER
SCREW(g)
4mm
GOLD

Fig. 15

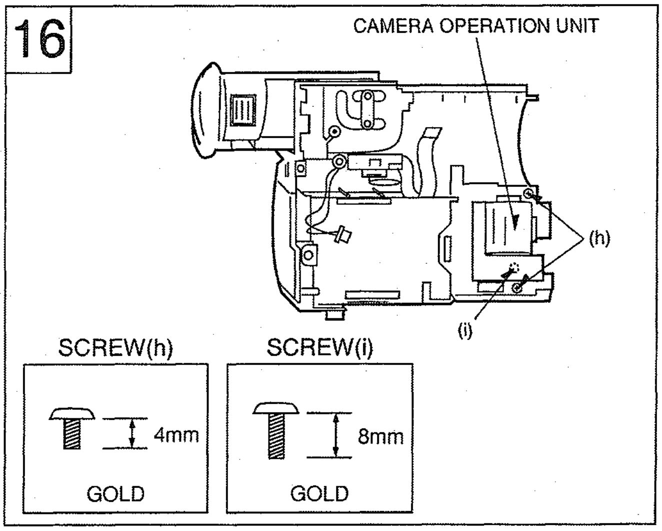

16
CAMERA OPERATION UNIT
(h)
(i)
SCREW(h)
4mm
GOLD
SCREW(i)
8mm
GOLD

Fig. 16

SECTION 3
BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS

3-1. ABBREVIATIONS

	INITIAL/LOGO	ABBREVIATIONS
A	A.TR	Auto Tracking
	AB0-4, AB12-15	Address Bus Line 0-4, 12-15
	ABSF	Focus Encoder Input
	ACI	Analog Channel Cording IC
	AD	Auto Date, Analogue Digital Converter
	AD0-6, ADR0-6	Address Data Line
	ADCLK	Analogue Digital Converter Clock
	ADCNT	Analogue Digital Control
	ADCS	Analogue Digital Chip Select
	A-DET	Audio Detect
	ADREC	Audio Delaied Rec
	ADUB	Audio Dubbing
	AE	Auto Expose
	AECNT	Auto Expose Control
	AEE (H)	Audio E-E (H)
	AEH	Audio Erase Head
	AEIRQ	Auto Expose Interrupt Request
	AF/MF	Auto Focus/Manual Focus
	AF DIS CS	AF DIS Chip Select
	AFADE	Audio Fade
	A-FADE (L)	Audio Fade (L)
	AFCS	Auto Focus Chip Select
	AF-VN	Zoom Encoder V-Ref (−)
	AF-VP	Zoom Encoder V-Ref (+)
	AGC	Automatic Gain Control
	AGCCNT	Automatic Gain Control Control
	AGND	Analogue Ground/Audio Ground
	AGS	Anti Ground Shooting
	AH (P) / (R)	Audio Head (Play) / (Record)
	AHASW	Audio Head Amp Switch Pulse
	AHSW	Audio Head Switch Pulse
	AI, AO	Buffer Input, Output
	AIBCK	Bit Clock (to A/D Converter)
	AIDAT	Serial data (to A/D Converter)
	AILRCK	L/R Clock (to A/D Converter)
	AIMCK	Master Clock (to A/D Converter)
	ALC CNT	Auto Level Control Control
	ALC MAIN	Auto Level Control Drive
	A-LOCK	Full Auto Switch
	AMUT	Audio Mute
	A-MUT (H)	Audio Mute (H)
	ANLPTH	Analogue Loop Through High
	AORP	Audio Overlap Pulse
	APCNT	Aperture Control
	APS	Auto Power Save
	ART VH	Artifical Vertical Sync
	AT CNT	Automatic Tracking Gain Adjust
	ATF	Automatic Track Finding
	ATFCLK	41.85MHz
	ATL	Auto Lock Select
	ATN	Absolute Track Number
	ATR OFF (H)	Auto Tracking Off (H)
	ATV	Advanced TV
	AUDIO (N)	Audio (Normal)
	AUX	Auxiliary
	AVDD	Analogue VDD
	AVSS	Analogue Ground
	AWTB	Auto White Balance B-Y
	AWTR	Auto White Balance R-Y
B	B/G OFF	AWT B-Offset Voltage
	BACK	Back-up
	BACK UP	Microcomputer Back-up
	BACK VDD	Back-up Power
	BATT	Battery
	BATT ALARM	Battery Alarm
	BATT REF	Reference Voltage for Battery
	BCB	B Carrier Balance
	BCBM (B-Y)	B-Y Carrier Balance
	BCBM (R-Y)	R-Y Carrier Balance
	BD 0-7	Bus Data
	BDCK	Standerd Bus Data Clock (9MHz)
	BDEN	Standerd Bus Data Enable
	BF	Burst Flag
	BFA	Burst Flug for Encoder
	BFO/BFI	Burst Flug Input/Output
	BI, BO	Buffer Input, Output
	BL	Back Light
	BL ON	Back Light ON (L)
	BL4V	Back Light 4V
	BLC 0, 1	Back Light Y Control Out, In
	BLDI/O	Back Light Drive Input/Output
	BLK	Blanking Pulse
	BLKA	Blanking for Encoder
	BLKI/O	Blanking Pulse In/Out
	BLKZ	Blanking Pulse for Zoom
	BM	Balance Modulator
	BQUIET	Bus Data Quite
	B-Y KB	B-Y Carrier Balance
	B-YO	B-Y Signal Out
C	C A In/Out	Pre-Aperture In/Out
	C CNT	Colour Control
	C SYNC	Composite Sync Signal
	C/N	Carrier/Noise
	C0-7, C00-07	Chrominance Signal 0-7
	CAGAIN	Aperture Gain Control
	CAM	Camera
	CAM CLK	Camera Clock
	CAM RST	Camera Reset

INITIAL/LOGO		ABBREVIATIONS	INITIAL/LOGO		ABBREVIATIONS
	CAM SIOC	Camera Serial In/Out Control		CO	Control Out
	CAM T	Camera Test		CO0-7	Chrominance Output 0 to 7 (Digital)
	CAM TL	Capstan Trque Limit		COM	Common
	CAP EC	Capstan Trque Control		COMB	Comb Filter
	CAP P (H)	Capstan Power On (H)		COS EQ	Cosine Equalizer
	CAP R/F/S	Capstan Revers (H) /Stop (M) /Forward (L)		CP	Clamp Pulse
	CAP SW	Capstan Power Control Switch		CP ON (H)	Camera Power On (H)
	CAPSTP H	Capstan Stop Flag (Stop High)		CP2, 20	Clamp Pulse
	CAPVM	Capstan Motor Current		CPN	Component Signal
	CAPVS	Capstan Motor Power Control Switch		CPOB	Clamp Pulse for Optical Blanking
	CAS	Compresion, Audio Process, Shuffling/Deshuffling		CPS	Composite Signal
	CAS	Memory Address Strobe (Active Low)		CR OUT	Pre-Aperture Out
	CASDOWN, DWN	Cassette Down (L)		CR POW SW	Camera Remote Power On Switch
	CBLK	Composite Blanking Pulse		CRA	Aperture Gain Control
	CC	Channel Cording		CRST	Camera Reset
	CCA	Current Control Amp		CS	Chip Select
	CCD	Charge Coupled Devise		CS 0-7	Chrominance Signal Out 0-7
	CCW	Counterclockwise		CSEL	Clock Phase Select
	CD SP0-7	Digital Chrominance 0-7		CSI 0-7	Chrominance Signal In 0-7
	CDS	Correlate Double Sampling Signal		CTSW	Crosstalk Switch
	CDS OUT	CCD Output Signal		CURR	Current
	CDS1,2	Sampling Pulse for CCD Output signal		CW	Clockwise
	CE	Control Pulse Erase		CYL EC	Cylinder Motor Trque Control
	CEC	Capstan Error Code		CYL PG	Cylinder Motor PG
	C-ERA (H)	Control Erase (H)		CYL VM	Cylinder Motor Current or Power
	CFEM	Chrominance Memory Signal			
	CFM	Chrominance Field Memory	D	D CLK	Digital Clock
	CG CLK	Character Generator Clock		D MODE	Digital Mode Switch Signal
	CG DATA	Character Generator Data		D01-03	Zoom 01-03
	CGC	Chrominance Gain Control		DAC	Digital Analogue Converter
	CH	Charge		DAG	Digital Analogue Ground
	CH1	Channel 1 (Odd Field)		DB0-7	Data 0-7
	CHR	Character		DCC	DC Clamp Control
	CHR BACK	Character Back-up		DCCNT	DC Control
	CHR MIX	Character Mix		DCI	Digital Channel Cording IC
	CI, CO	Buffer In/Out		DCLR	Digital Clear
	CIF, CIR	Positive Control Pulse, Negative Control Pulse		DCP	Digital Clamp Pulse
	CK	Clock		DCT	Discrete Cosine Transform (Compression)
	CL/CLK	Clock		DCX7	Serial Data
	CLASS	Classeffication Signal for Compress (DCT/VLC)		DEDP 0-3	Playback Data
	CLK135	13.5 MHz System Clock		DEDR 0-3	Rec Data
	CLK18	18 MHz System Clock		DEMP	De-Emphasis
	CLK2	Clock 2 (824XFH : 12.875 MHz)		DFD0-7	Encode Input/Output Signal for Shuffling Memory
	CLK27	27 MHz System Clock		DIBDCK	Bit Clock
	CLX, CLX1-4	Shift Clock for X Direction (LCD Panel)		DICLK	Digital Clock
	CLY	Shift Clock for Y Direction (LCD Panel)		DIDAT	Serial Data
	CLY FG	Cylinder FG Signal		DILRCK	L/R Clock
	CMEM0-3	Chrominance Memory 0-3		DIMCK	Master Clock
	CMIX	Character Mix		DIOS	Select Signal for Digital In/Out
	CMO	Chrominance Memory Output		DIS	Digital Image Stabilizer
	CMODE	Camera Mode		DIS R/B	Digital Image Stabilizer Read (H) /Busy (L)
	CNCLK	Clock		DIS/KAND	Digital Image Stabilizer/Sensitivity
	CNR	Chrominance Noise Reduction		DISCS	Dis Chip Select
	CNT, CONT	Control		DISP	Display

INITIAL/LOGO		ABBREVIATIONS
	DL	Delay Line
	DOBCK	Bit Clock (to D/A Converter)
	DOCTL.	Data Output Control
	DODAT	Serial Data (to D/A Converter)
	DOLRCK	L/R Clock (to D/A Converter)
	DOMCK	Master Clock (to D/A Converter)
	DQ 1-16	Memory Data
	DRK	Dark (LPF Switch for Auto Focus)
	DS	Double Sampling Pulse
	DS1, 2	Double Sampling Pulse
	DSF 0-7	Input/Output Data to Shuffling Memory (18 MHz)
	DSP	Digital Signal Processor
	DSV	Digital Sum Variation
	DV	Digital Video
	DVB	Digital Video Broadcast
	DVC	Digital Video Cassette
	DVDD	Digital VDD
	DVIO	Digital Video Input Output
	DVSS	Digital Ground
	DX	Shift Data for X Direction (for LCD)
	DY	Shift Data for Y Direction (for LCD)
	DZ	Digital Zoom
E	E Snap	Electric Snap Shot
	E ZM	Electric Zoom
	E2P	EEPROM
	EARP	Earphone
	EC	Error Control
	EC	Torque Control
	ECC	Error Correction Cording
	ECM	Electric Condencer Mic
	ECR	Reference Voltage for Capstan Torque
	EDA	Error Correction, DCI, ATF Servo
	EE CS	EEPROM Chip Select
	EE R/B	EEPROM Read (H) /Busy (L)
	EEPROM	Electric Erasable Programable Read Only Memory
	EIS	Electric Image Stabilizer (DIS)
	ENV	Enverope
	EOB	End Of Block
	EQ	Equalizer
	EVF	Electric View Finder
	EXT DC	External DC (AC Adaptor)
	EXT DC (H)	AC Adaptor DC (H)
	EXT NOREG	AC Adaptor 6V
	EXT S DATA	Serial Data for Edit
	EXT SCK	Serial Clock for Edit
	EZOOM	Electric Zoom
F	F	Far (Focus)
	F ENC	Lens F-Value
	FACT MODE	Factry Mode (not used in the service)
	FB	Feed Back
	FC	Saw Tooth Signal In
	FCK	Clock
	FCO	Saw Tooth Signal Generator
	FENC	Focus Encoder
	FEND	Frame End Pulse
	FH2B	FH/2 (15.625 KHz/2 = 7.8125 KHz)
	FIX OSD	Auto Tracking Off (H)
	FM	Field Memory
	FM0-7	Field Memory 0 - 7
	FMCI0-3	Field Memory Chrominance In 0-3
	FMCO0-3	Field Memory Chrominance Out 0-4
	FMDIR	Focus Motor Direction
	FMOEM	Field Memory Enable
	FMOEO	Field Memory Enable
	FMT1-4	Focus Motor Terminal 1-4
	FMY00-07	Field Memory Luminance Out 0-7
	FMYI0-07	Field Memory Luminance In 0-7
	FNO	F Value
	FPS	Frame Refference Signal
	FR	Capstan Reverse High
	FRP	Frame Refference Pulse
	FRP	Frame Start Pulse
	FRPSO	Frame Start Pulse
G	G1,G2,G3	Gap 1, 2 and 3
	GCA	Gain Control AMP
	GCNT	Gain Control
	G-CNT	AGC Adjustment
	GCTRL	Gain Control
	GENE	Generator
	GF	FG AMP Terminal
	GSW	Ground for Switching Power
H	H/M/N	Hi-Fi/Mix/Normal
	H/N	Hi-Fi/Normal
	H1,2	H. CCD Drive Pulse
	HAP	Horizontal Aperture
	HASW	Head AMP Switching Pulse
	HB	Hall Bias
	HBR SET	High Brightness Set
	HBRST	High Brightness Set
	HCLR	High Clear
	HCP	Shift Clock for Horizontal Drive
	HD	Horizontal Drive Pulse
	HDTV	High Definition TV
	HEX	Hexadecimal
	HG	Hall Gain
	HID	Head Switching Pulse
	HLT	High Bright Signal
	HOLE IN (+) , (−)	Input Signal from Hall IC
	HP	Headphone
	HPF	High Pass Filter
	HSE	Modulated Data Output
	HSS	Horizontal Sinc Signal
	HSW	Head Switching Pulse
	HS-WT	High Speed Zoom

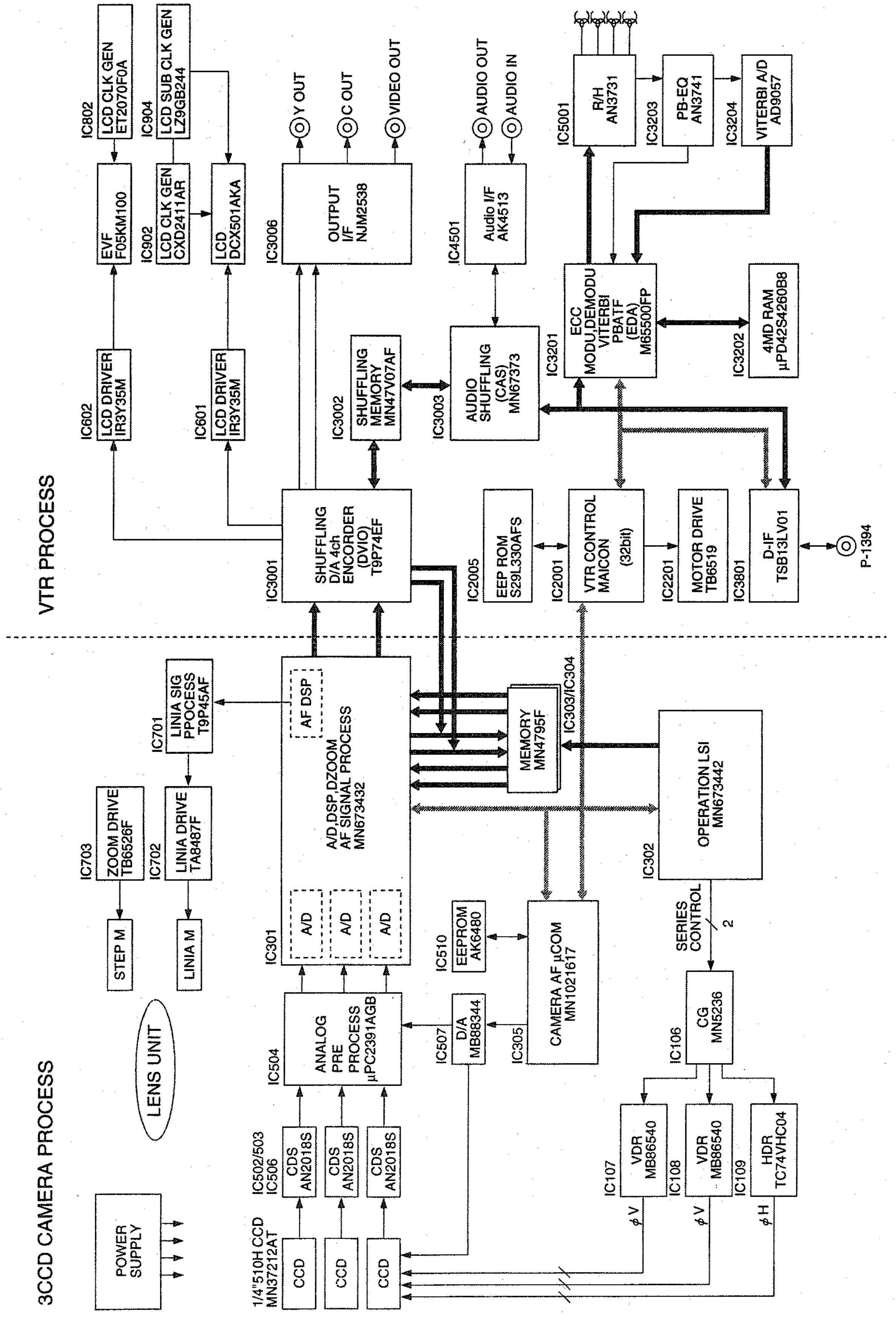
INITIAL/LOGO		ABBREVIATIONS
	HSZ	High Speed Zoom
I	I/F	Interface
	I-2 C	Inter Integrated Circuit
	ID (H)	Wide Television (H)
	IMP	Inter Microprocessor Protocol
	INF	Input Frame Signal
	INF	CCD Input Signal 1
	INS	CCD Input Signal 2
	INTER	Interval Recording
	INV	Inverter
	IOU	R-Y Analogue Signal Output
	IOV	B-Y Analogue Signal Output
	IOY	Y Analogue Signal Output
	IR	Infrared Rays
	IRDET	Infrared Rays Detection
	IREF	Current Adjustment Terminal
	IRIS/SH	Iris/Shutter Control
	IRQ	Interrupt Request
	ITI	Insert & Track Information
J	JPEG	Joint Photographoc Image Cording Experts Group
K	KANDO	Digital Gain Up
	KB	Carrier Balance
	KEY IN	Key Scan
	KND	Digital Gain Up
	KNEE	Luminance Compensate
L	LCD	Liquid Crystal Display
	LCD P (L)	LCD Power On (L)
	LD	Load Pulse
	LDD	Liquid Direct Drive
	LEDCNT	LED Control
	LI-BATT	Lithium Battery
	LOAD	Loading
	LOAD F, R	Loading Direction (F:Forward/R:Reverse)
	LPF	Low Pass Filter
	LRMONO	Monoral Audio (L + R)
	LSB	Least Significant Bit
	LVL	LPF Switch for Auto Focus
M	MA0-5	Microprocessor Address Data 0-5
	M1-3	Motor Coil Terminal 1 to 3
	Mbps	Megahertz Bit Per Second
	MD	Modulation
	MD0-7	Microprocessor Data 0-7
	MDT0-7	Microprocessor Data 0-7
	ME (TAPE)	Metal Evaporated (Tape)
	MENB	Focus Motor Enable
	MFF	Manual Focus Far
	MFN	Manual Focus Near
	MHSYNC	Monitor Horizontal Sync Signal
	MIC	Memory In Cassette
	MIG	Metal In Gap
	MIX N.R.D.	Non Rec Data Mix
	MOD	Modulation
	MOUT	Mic Out
	MP (TAPE)	Metal Particle (Tape)
	MPEG	Moving Picture Image Cording Experts Group
	MPEG2	Moving Picture Image Cording Experts Group Phase 2
	MRST	Focus Motor Reset
	MSB	Most Signal Bit
	MVSYNC	Monitor Vertical Sync Signal
N	N	Near (Focus)
	N/F	Near/Far Focus
	N/P	NTSC/PAL
	NB1-3	Base for NPN Transistor
	NC	No Connection
	NC1-3	Corrector of NPN Transistor
	NCLR	Power On Reset
	NCP1	Clamp Pulse
	NCP2+VDH	Clamp Pulse + Horizontal Drive Pulse
	NCP2+VDM	Clamp Pulse + Gate Pulse
	NDE	Non Liner De-Emphasis
	NE	Emitor of NPN Transistor
	NLE	Non Liner Emphasis
	NR	Noise Reduction
	NRD	Non Rec Data
	NRD BLK	Non Rec Data Blanking
	NRD CLK	No Rec Data Clock
	NRE	Read Enable Input (Low Active)
	NWE	Write Enable (Low Active)
O	OB	Optical Black
	OBCNT	Optical Black Control
	OBREF	Reference Voltage for Optical Black Control
	OE	Output Enable
	OFH	Horizontal Counted Down Clock Signal (Reference)
	OFS	Offset
	OP	Operation AMP Output
	OSD	ON Screen Display
	OVL	Overlap Pulse
	OZ	Optical Zoom
P	PB1-3	PNP Base 1-3
	P SW	Power Switch
	PBCTL	Play Back Control
	PBCTL	Pre-Branking Control
	PBH	Head Amp Switch
	PBLK	Pre-Blanking (Pulse)
	PC1-3	Corrector of PNP Transistor
	PCBM	Carrier Balance
	PCH	Phase Compensator (Hall AMP)
	PCI	Phase Compensator (Current)
	PCO	Phase Compensator Out
	PCS	Switching Power Control

	INITIAL/LOGO	ABBREVIATIONS
	PCV	Phase Compensator (Voltage)
	PE	Emitter of PNP Transistor
	PED	Pedestal
	PEDECNT	Pedestal Control
	PENO	Alarm (L)
	PFP	Pilot Frame Position
	PGA, B	Power Ground A, B
	PGC	Pulse Generator Comparator
	PGI	Pulse Generator Input
	PGMM	Pulse Generator Monostable Multivibrator
	PGO	Output of Pulse Generator AMP
	PMODE	Select Signal for Normal/Wide Screen
	PON	Power On
	POR	Power On Reset
	POSCOM	Common Position
	PREAMP	Pre-AMP
	PREBLK	Pre-Blanking
	PT	Protect for V Voltage
	PWM	Pulse Width Modulation
	PWMB	Pulse Width Modulation Pulse
Q	Q2H	Source Output Select
R	R CTL P	Recorded Control Pulse (+)
	R CTL R	Recorded Control Pulse (-)
	R/B	Read/Busy
	R/L	Direction Control for Data Transmition
	RA	Recording AMP
	RA1	Rec AMP 1
	RAC AC	Rec Audio Current
	RAD	Read Address Data
	RAE	Read Address Enable
	RB	Read Busy
	R-B	R Bias
	RCB	R Carrier Balance
	RE	Read Enable
	RE (F) , (S)	Rotary Erase Head Transformer
	REB	R Bias
	REC CC	Rec Current Control
	REC CCNT	Rec Current Control
	RECCTRL	Recording Control Pulse
	RECI	Rec Amp Switch
	RENCF	Lens Control (Forward)
	RENCR	Lens Control (Reverse)
	RERASE	Rotary Erase Head
	RGBIV1-2	1V Inverted Signal 1-2
	RGO R/G OFF	Offset Voltage For AWT R
	RSF	Capstan Direction (Reverse/Stop/Forward)
	RST	Reset
	RSTB	R Strobe
	RSTPWD	Reset Power Down Input
	RSTR	Reset Read
	RSTW	Reset Write
	RT	Saw Tooth Terminal
	RVCO	Resister for Oscillation
	RW	Read Write
	RWAE	Read Write Enable
	R-YKB	R-Y Carrier Balance
S	S PHOT	Supply Photo Transistor
	S/H	Sampling Hold
	S/S	Start/Stop
	SBD	Serial Data
	SBI	Serial Data Input
	SBO	Serial Data Output
	SBT	Serial Clock
	SCAN0-5	Key Scan 0-5
	SCK	Serial Clock
	SCR	Search
	SCR, S.C.R	Still Cue Review
	SEG.	Segment
	SET	White Balance Set
	SH/IRIS	Shutter/Iris Control
	SHIFT	Capasitor for Phase Shift
	SI	Serial Data Input
	SIOC	Serial In/Out Control
	SNAP	Snap Shot
	SNS LED	Sensor LED
	SO	Serial Data Output
	SPA	ATF Sampling Pulse
	SPEN	8 Bit Shift Register Enable
	SPK	Speaker
	SPO	Reset for Switching Power
	SPST	8 Bit Shift Register Strobe
	SREELP	Supply Reel Pulse
	SRT	Start
	SSA	Start Sync block Area
	SSW	Select Signal for Low Pass Filter
	ST5V	Safety Tab 5V
	STAB	Safety Tab Switch
	STB	Stand by Signal
	STB	Strobe
	SWB	Switching Pre-Drive Pulse
	SYL EC	Cylinder Torque Control
	SYL FG	Cylinder FG
T	T	Tele (Zoom)
	T PHOT	Take-up Photo Transistor
	TBC	Time Base Conntrol
	TFT	Thim Film Transistor
	TH	Thermostat for Battery
	TI	Test Mode Select
	TL	Torque Limit
	TM	Sub Code
	TMD	Sub Code Data
	TRE	Tracking Error Signal
	TREEL (P)	Take-up Reel (Pulse)
	TRFIX	Tracking Fix

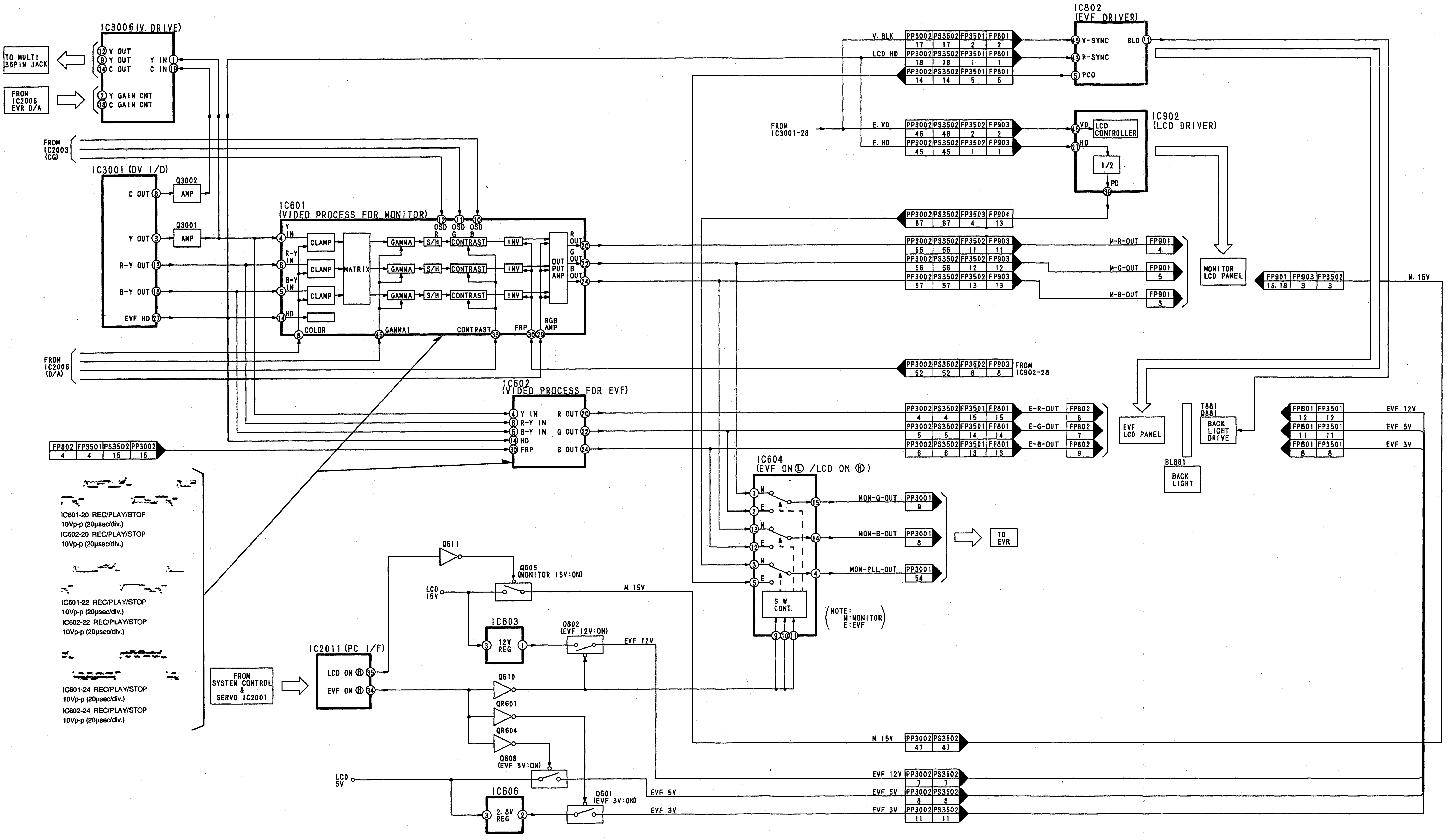
INITIAL/LOGO		ABBREVIATIONS
	TRIWAVE	Tracking Wave
	TRP	Tracking Position
	TRP	Trap
	TSR	Head Switching Refference
	TST	Time Scale Transfer
U	U/V SEL	R-Y/B-Y Select Signal
	UNLOAD	Un-Loading
	UNRE	Microprocessor Read Enable
	UNWE	Microprocessor Write Enable
	UV	R-Y/B-Y
	UV SEL	R-Y/B-Y Select Signal
V	V1-V4	V.CCD Drive Pulse
	VB	VH Filter Switching
	VCE	Power Terminal
	VCNTL	Video Control
	VCO	Voltage Control Oscillator
	VCP	Shift Clock Output for Vertical Drive
	VCTLD	Video Control
	VCTRL	Voltage Charge Control
	VD	Vertical Drive Pulse
	VDDX	X Drive Power for Colour LCD
	VDDXY	XY Drive Power for Colour LCD
	VDDY	Y Drive Power for Colour LCD
	VDREC	Video Delayed Rec
	Vgg	Voltage for Gate IC
	Vgl	Gate off Voltage
	VID	Video Signal Out
	VIN	Video In
	VITC	Vertical Interval Time Code
	VITERBI	One of Signal Detection Method
	VL	Low Voltage
	VLC	Variable Length Cording
	VLOCKP	Artificial Sync Pulse
	VLP	Artificial Sync Pulse
	VM	Motor Voltage
	VMD	Velocity Mode Data
	VMD1-3	Electric Shutter Mode
	VMODE	NTSC/PAL Select Switch
	VMVH	VH Filter Switching
	VORP	Video Overlap
	VRB	Voltage Refference Bottom
	VRBS	Voltage Refference Bottom Output
	VREF1R3V	Refference Voltage 1.3V
	VREF3R3V	Refference Voltage 3.3V
	VREFH	Refference Voltage High Side
	VREFL	Refference Voltage Low Side
	VRI	Refference Voltage Input
	VRO	Refference Voltage Output
	VRT	Voltage Refference Top
	VRTS	Voltage Refference Top Output
	VS	Switching Comparator
	VSS	Vertical Sync Signal

INITIAL/LOGO		ABBREVIATIONS
	VSSX	X Driver Power for Colour LCD
	VSSXY	X-Y Driver Power for Colour LCD
W	W	Wide (Zoom)
	W/N	Mode Select for Window Mode
	W/N	Wide/Normal
	WAD	Write Address Enable
	WAE	Write Address Enable
	WAERAE	Write Address Enable
	WARI	Interrupt
	WB	White Balance
	WE	Write Enable
	WEM	Memory Write Enable
	WHD	Wide Horizontal Drive Pulse
	WIDE A	Wide Zoom
	WSB	B AGC Control
	WSR	R AGC Control
	WTV	Wide TV
X	XP	FG Logic Reset
Y	Y FM0-7	Y Field Memory 0-7
	YCE	Cylinder Error Code
	YGC	Y Gain Control
	YMO 0-7	Y Field Memory 0-7
	YNCST	Noize Canceller
	YNR	Luminance Noise Reduction
	YSDP 0-7	Digital Y Out 0-7
Z	Z.ENC	Zoom Encoder
	Z.MIC	Zoom Mic
	ZENC	Zoom Encoder Output
	ZMDIR	Zoom Drive
	ZMEN	Zoom Enable
	ZMT	Zoom Motor Tele Side
	ZMT (+)/(−)	Zoom Motor (+)/(−)
	ZMTER	Zoom Motor Tele Side
	ZMW	Zoom Motor Wide Side
	ZSW	Zoom Switch

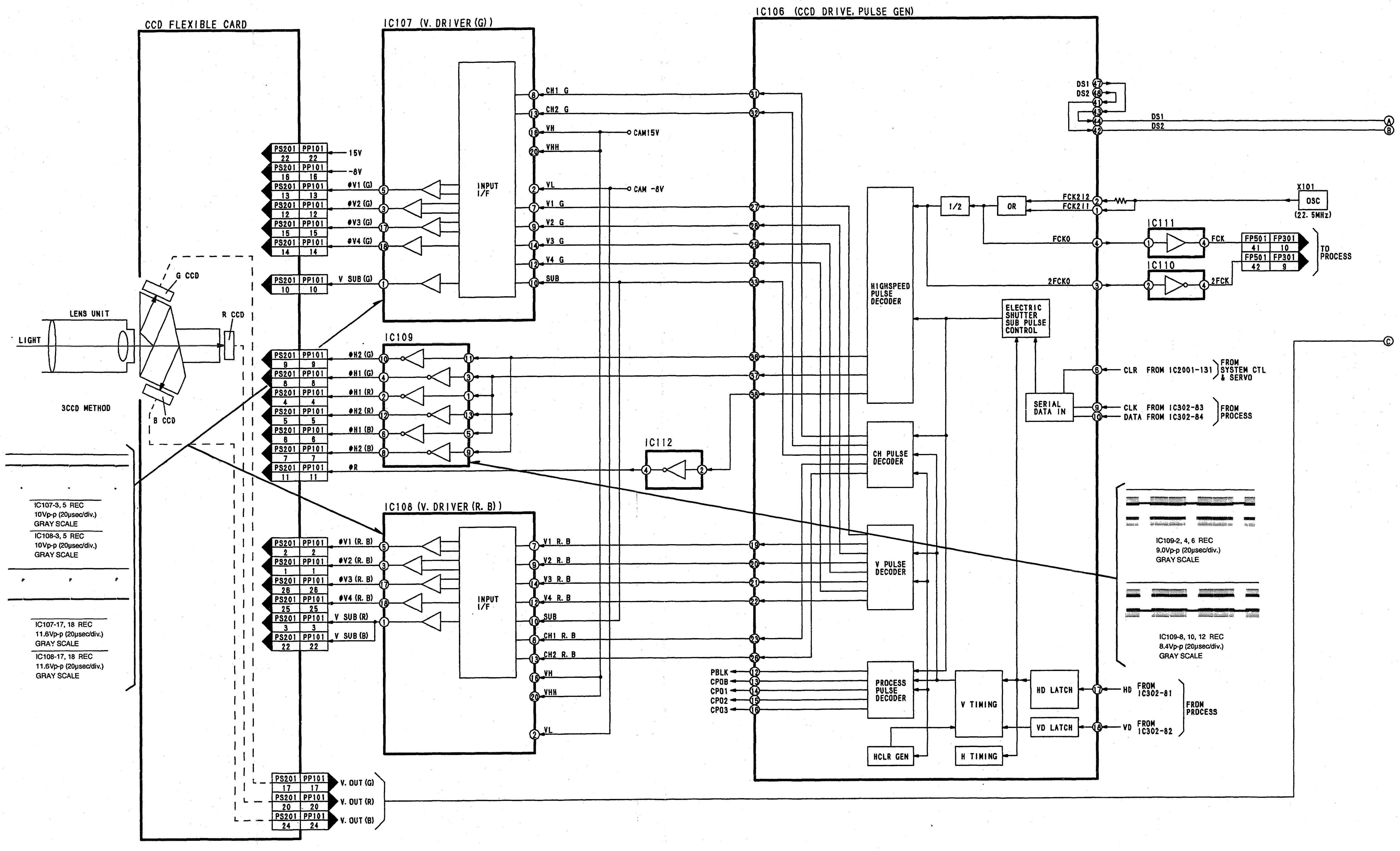
3-2. OVERALL BLOCK DIAGRAM


VTR PROCESS
3CCD CAMERA PROCESS
IC802
LCD CLK GEN
ET2070F0A
IC904
LCD SUB CLK GEN
LZ9GB244
EVF
F05KM100
IC902
LCD CLK GEN
CXD2411AR
LCD
DCX501AKA
IC602
LCD DRIVER
IR3Y35M
IC601
LCD DRIVER
IR3Y35M
Y OUT
C OUT
VIDEO OUT
IC3006
OUTPUT
I/F
NJM2538
AUDIO OUT
AUDIO IN
IC4501
Audio I/F
AK4513
IC3002
SHUFFLING
MEMORY
MN47V07AF
IC3003
AUDIO
SHUFFLING
(CAS)
MN67373
IC5001
R/H
AN3731
IC3203
PB-EQ
AN3741
IC3204
VITERBI A/D
AD9057
IC3201
ECC
MODU,DEMODU
VITERBI
PBATF
(EDA)
M65500FP
IC3202
4MD RAM
µPD42S4260B8
IC3001
SHUFFLING
D/A 4ch
ENCORDER
(DVIO)
T9P74EF
IC2005
EEP ROM
S29L330AFS
IC2001
VTR CONTROL
MAICON
(32bit)
IC2201
MOTOR DRIVE
TB6519
IC3801
D-IF
TSB13LV01
P-1394
IC701
LINIA SIG
PPOCESS
T9P45AF
IC703
ZOOM DRIVE
TB6526F
IC702
LINIA DRIVE
TA8487F
STEP M
LINIA M
LENS UNIT
IC301
AF DSP
A/D,DSP,DZOOM
AF SIGNAL PROCESS
MN673432
A/D
A/D
A/D
IC303/IC304
MEMORY
MN4795F
IC302
OPERATION LSI
MN673442
SERIES
CONTROL
2
IC510
EEPROM
AK6480
IC305
CAMERA AF µCOM
MN1021617
IC504
ANALOG
PRE
PROCESS
µPC2391AGB
IC507
D/A
MB88344
IC106
CG
MN5236
IC502/503
IC506
CDS
AN2018S
CDS
AN2018S
CDS
AN2018S
IC107
VDR
MB86540
IC108
VDR
MB86540
IC109
HDR
TC74VHC04
φV
φV
φH
1/4"510H CCD
MN37212AT
CCD
CCD
CCD
POWER
SUPPLY

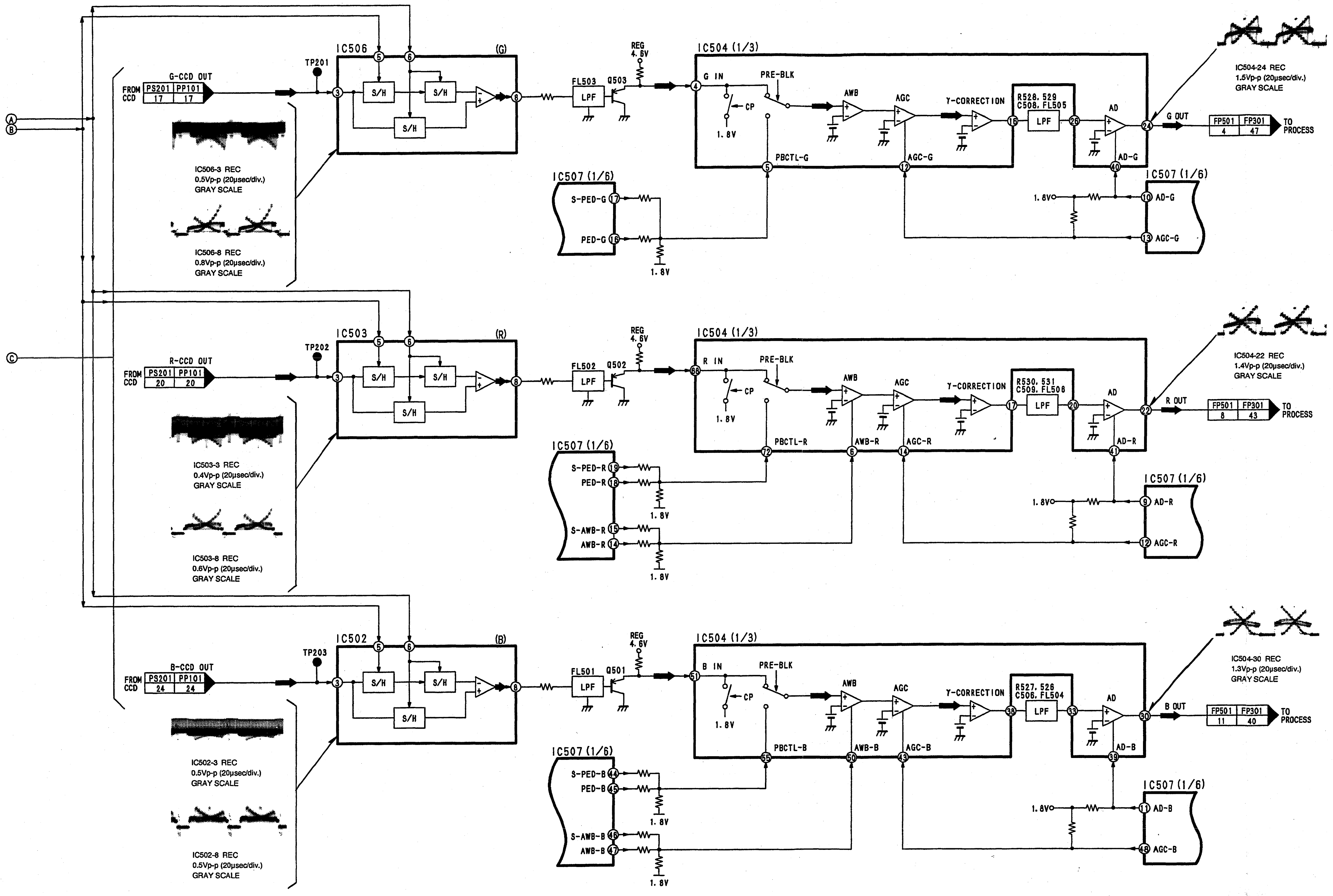
3-3. EVF & LCD MONITOR BLOCK DIAGRAM


IC3006 (V. DRIVE)
V OUT
Y OUT
C OUT
Y IN
C IN
Y GAIN CNT
C GAIN CNT
TO MULTI 36PIN JACK
FROM IC2006 EVR D/A
FROM IC2003 (CG)
IC3001 (DV I/O)
C OUT
Y OUT
R-Y OUT
B-Y OUT
EVF HD
Q3002 AMP
Q3001 AMP
IC601 (VIDEO PROCESS FOR MONITOR)
Y IN
R-Y IN
B-Y IN
HD
CLAMP
MATRIX
GAMMA
S/H
CONTRAST
INV
OSD R
OSD G
OSD B
R OUT
G OUT
B OUT
OUT PUT AMP
COLOR
GAMMA1
CONTRAST
FRP
RGB AMP
FROM IC2006 (D/A)
IC602 (VIDEO PROCESS FOR EVF)
Y IN
R-Y IN
B-Y IN
HD
FRP
R OUT
G OUT
B OUT
FP802 FP3501 PS3502 PP3002
IC601-20 REC/PLAY/STOP
10Vp-p (20μsec/div.)
IC602-20 REC/PLAY/STOP
10Vp-p (20μsec/div.)
IC601-22 REC/PLAY/STOP
10Vp-p (20μsec/div.)
IC602-22 REC/PLAY/STOP
10Vp-p (20μsec/div.)
IC601-24 REC/PLAY/STOP
10Vp-p (20μsec/div.)
IC602-24 REC/PLAY/STOP
10Vp-p (20μsec/div.)
FROM SYSTEM CONTROL & SERVO IC2001
IC2011 (PC I/F)
LCD ON Ⓗ
EVF ON Ⓗ
Q611
Q605 (MONITOR 15V:ON)
LCD 15V
M. 15V
IC603
12V REG
Q602 (EVF 12V:ON)
EVF 12V
Q610
QR601
QR604
Q608 (EVF 5V:ON)
LCD 5V
IC606
2.8V REG
Q601 (EVF 3V:ON)
EVF 5V
EVF 3V
IC802 (EVF DRIVER)
V-SYNC
H-SYNC
PCO
BLD
V. BLK
LCD HD
PP3002 PS3502 FP3501 FP801
FROM IC3001-28
E. VD
E. HD
PP3002 PS3502 FP3502 FP903
IC902 (LCD DRIVER)
VD
HD
LCD CONTROLLER
1/2
PD
PP3002 PS3502 FP3503 FP904
M-R-OUT
M-G-OUT
M-B-OUT
FP901
MONITOR LCD PANEL
FP901 FP903 FP3502
M. 15V
FROM IC902-28
E-R-OUT
E-G-OUT
E-B-OUT
FP802
EVF LCD PANEL
T881 Q881
BACK LIGHT DRIVE
BL881
BACK LIGHT
FP801 FP3501
EVF 12V
EVF 5V
EVF 3V
IC604 (EVF ON Ⓛ /LCD ON Ⓗ)
M
E
S W CONT.
MON-G-OUT
MON-B-OUT
MON-PLL-OUT
PP3001
TO EVR
NOTE: M:MONITOR E:EVF
PP3002 PS3502

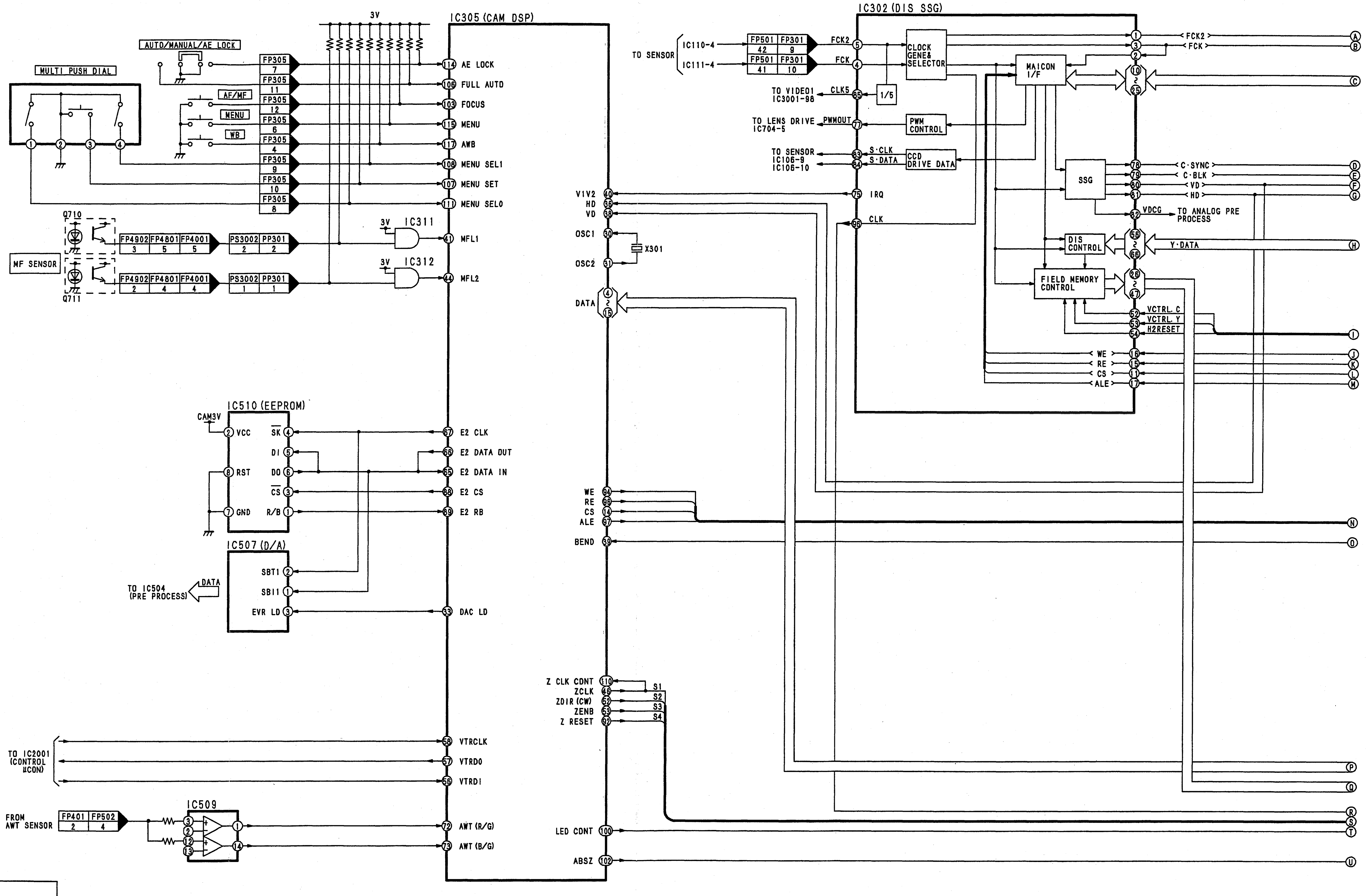
3-4. CCD DRIVE BLOCK DIAGRAM


CCD FLEXIBLE CARD
IC107 (V. DRIVER (G))
IC106 (CCD DRIVE, PULSE GEN)
IC109
IC108 (V. DRIVER (R, B))
IC112
IC111
IC110
INPUT I/F
HIGHSPEED PULSE DECODER
ELECTRIC SHUTTER SUB PULSE CONTROL
SERIAL DATA IN
CH PULSE DECODER
V PULSE DECODER
PROCESS PULSE DECODER
V TIMING
HD LATCH
VD LATCH
HCLR GEN
H TIMING
1/2
OR
OSC
X101
(22. 5MHz)
LENS UNIT
LIGHT
G CCD
R CCD
B CCD
3CCD METHOD
PS201
PP101
15V
-8V
φV1 (G)
φV2 (G)
φV3 (G)
φV4 (G)
V SUB (G)
φH2 (G)
φH1 (G)
φH1 (R)
φH2 (R)
φH1 (B)
φH2 (B)
φR
φV1 (R, B)
φV2 (R, B)
φV3 (R, B)
φV4 (R, B)
V SUB (R)
V SUB (B)
V. OUT (G)
V. OUT (R)
V. OUT (B)
CH1 G
CH2 G
VH
VHH
VL
V1 G
V2 G
V3 G
V4 G
SUB
CAM15V
CAM -8V
V1 R, B
V2 R, B
V3 R, B
V4 R, B
CH1 R, B
CH2 R, B
PBLK
CPOB
CPO1
CPO2
CPO3
DS1
DS2
FCK212
FCK211
FCKO
2FCKO
FCK
2FCK
FP501
FP301
TO PROCESS
CLR FROM IC2001-131
FROM SYSTEM CTL & SERVO
CLK FROM IC302-83
DATA FROM IC302-84
FROM PROCESS
HD FROM IC302-81
VD FROM IC302-82
FROM PROCESS
IC107-3, 5 REC
10Vp-p (20μsec/div.)
GRAY SCALE
IC108-3, 5 REC
10Vp-p (20μsec/div.)
GRAY SCALE
IC107-17, 18 REC
11.6Vp-p (20μsec/div.)
GRAY SCALE
IC108-17, 18 REC
11.6Vp-p (20μsec/div.)
GRAY SCALE
IC109-2, 4, 6 REC
9.0Vp-p (20μsec/div.)
GRAY SCALE
IC109-8, 10, 12 REC
8.4Vp-p (20μsec/div.)
GRAY SCALE
A
B
C

Back Page:
EVF & LCD Section

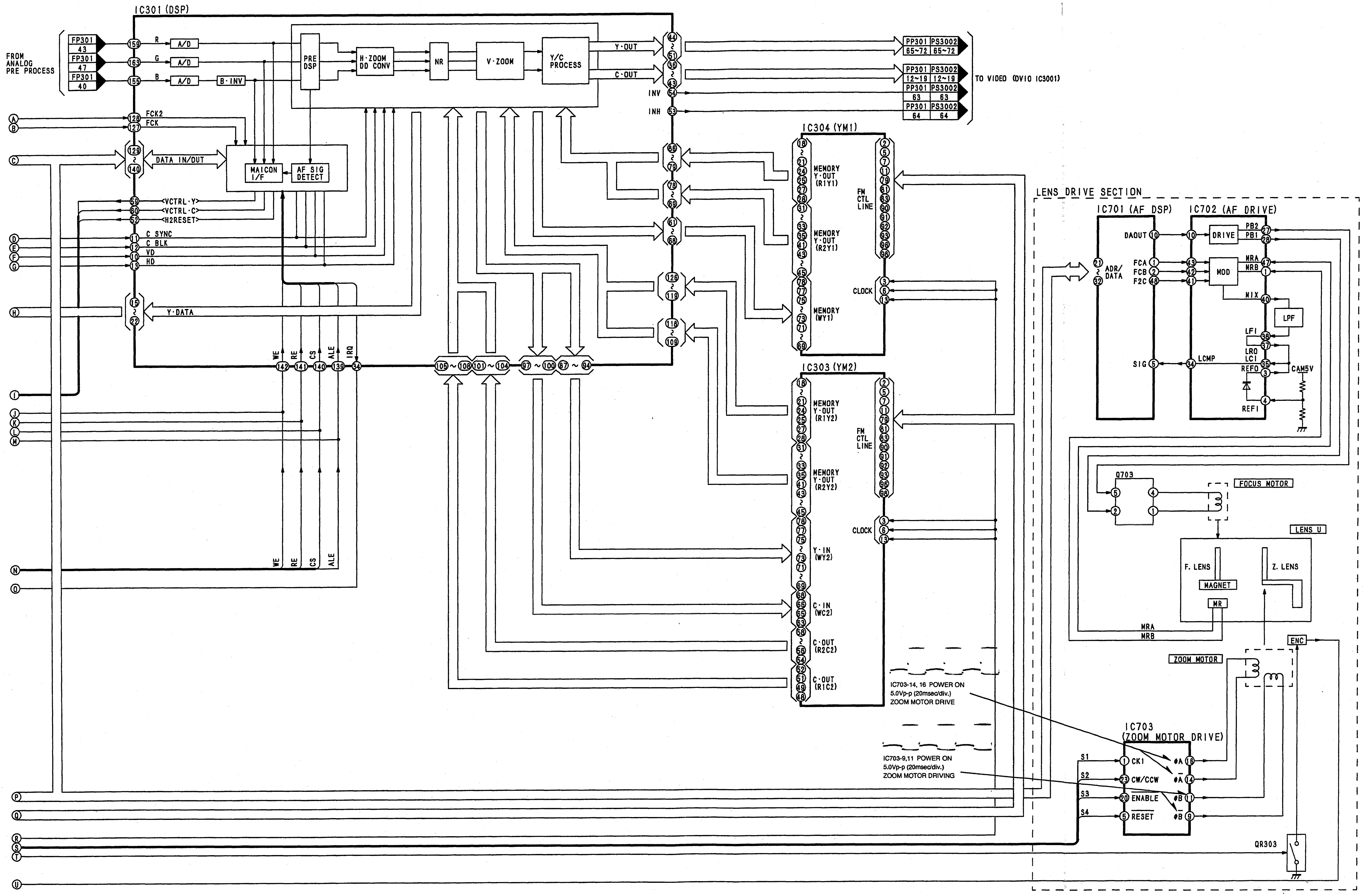

Ⓐ
Ⓑ
Ⓒ
IC506
(G)
TP201
G-CCD OUT
FROM CCD
PS201
PP101
17
17
S/H
S/H
S/H
IC506-3 REC
0.5Vp-p (20μsec/div.)
GRAY SCALE
IC506-8 REC
0.8Vp-p (20μsec/div.)
GRAY SCALE
REG
4.6V
FL503
Q503
LPF
IC504 (1/3)
G IN
PRE-BLK
CP
1.8V
AWB
AGC
γ-CORRECTION
R528, 529
C508, FL505
LPF
AD
PBCTL-G
AGC-G
AD-G
G OUT
FP501
FP301
4
47
TO PROCESS
IC504-24 REC
1.5Vp-p (20μsec/div.)
GRAY SCALE
IC507 (1/6)
S-PED-G
PED-G
1.8V
IC507 (1/6)
1.8V
AD-G
AGC-G
IC503
(R)
TP202
R-CCD OUT
FROM CCD
PS201
PP101
20
20
S/H
S/H
S/H
IC503-3 REC
0.4Vp-p (20μsec/div.)
GRAY SCALE
IC503-8 REC
0.6Vp-p (20μsec/div.)
GRAY SCALE
REG
4.6V
FL502
Q502
LPF
IC504 (1/3)
R IN
PRE-BLK
CP
1.8V
AWB
AGC
γ-CORRECTION
R530, 531
C509, FL506
LPF
AD
PBCTL-R
AWB-R
AGC-R
AD-R
R OUT
FP501
FP301
8
43
TO PROCESS
IC504-22 REC
1.4Vp-p (20μsec/div.)
GRAY SCALE
IC507 (1/6)
S-PED-R
PED-R
S-AWB-R
AWB-R
1.8V
1.8V
IC507 (1/6)
1.8V
AD-R
AGC-R
IC502
(B)
TP203
B-CCD OUT
FROM CCD
PS201
PP101
24
24
S/H
S/H
S/H
IC502-3 REC
0.5Vp-p (20μsec/div.)
GRAY SCALE
IC502-8 REC
0.5Vp-p (20μsec/div.)
GRAY SCALE
REG
4.6V
FL501
Q501
LPF
IC504 (1/3)
B IN
PRE-BLK
CP
1.8V
AWB
AGC
γ-CORRECTION
R527, 526
C506, FL504
LPF
AD
PBCTL-B
AWB-B
AGC-B
AD-B
B OUT
FP501
FP301
11
40
TO PROCESS
IC504-30 REC
1.3Vp-p (20μsec/div.)
GRAY SCALE
IC507 (1/6)
S-PED-B
PED-B
S-AWB-B
AWB-B
1.8V
1.8V
IC507 (1/6)
1.8V
AD-B
AGC-B

3-5. PROCESS BLOCK DIAGRAM

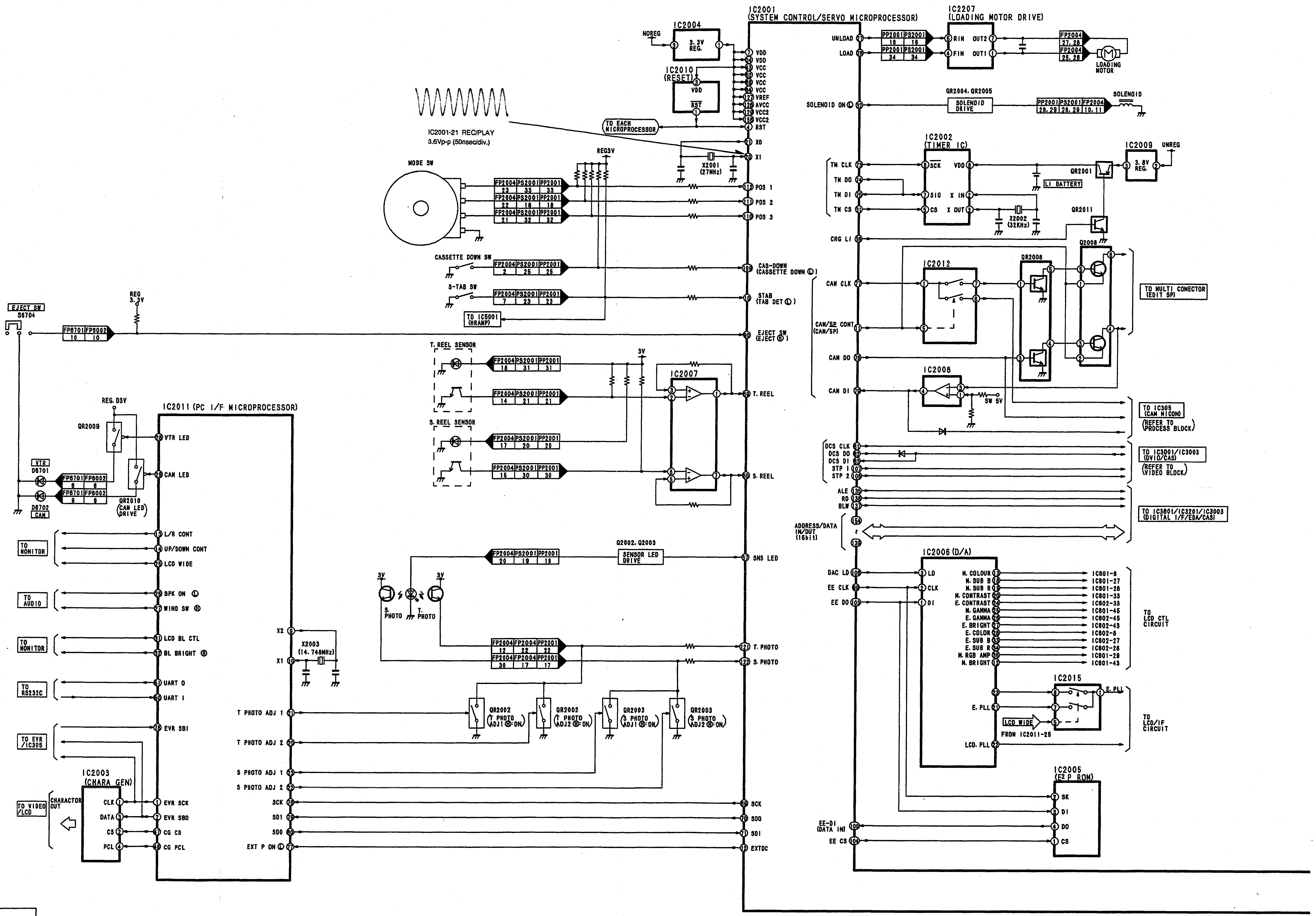


IC305 (CAM DSP)
3V
AUTO/MANUAL/AE LOCK
MULTI PUSH DIAL
AF/MF
MENU
WB
FP305 7
FP305 11
FP305 12
FP305 6
FP305 4
FP305 9
FP305 10
FP305 8
114 AE LOCK
106 FULL AUTO
103 FOCUS
115 MENU
117 AWB
108 MENU SEL1
107 MENU SET
111 MENU SEL0
Q710
Q711
MF SENSOR
FP4902 FP4801 FP4001 3 5 5
FP4902 FP4801 FP4001 2 4 4
PS3002 PP301 2 2
PS3002 PP301 1 1
IC311
IC312
41 MFL1
44 MFL2
V1V2
HD
VD
OSC1
OSC2
X301
DATA
IC510 (EEPROM)
CAM3V
VCC
RST
GND
SK
DI
DO
CS
R/B
67 E2 CLK
66 E2 DATA OUT
65 E2 DATA IN
88 E2 CS
89 E2 RB
IC507 (D/A)
SBT1
SBI1
EVR LD
TO IC504 (PRE PROCESS)
DATA
33 DAC LD
WE
RE
CS
ALE
BEND
Z CLK CONT
ZCLK
ZDIR (CW)
ZENB
Z RESET
S1
S2
S3
S4
TO IC2001 (CONTROL µCON)
58 VTRCLK
57 VTRDO
56 VTRDI
IC509
FROM AWT SENSOR
FP401 FP502 2 4
72 AWT (R/G)
73 AWT (B/G)
LED CONT
ABSZ
IC302 (DIS SSG)
TO SENSOR
IC110-4
IC111-4
FP501 FP301 42 9
FP501 FP301 41 10
FCK2
FCK
CLOCK GENE& SELECTOR
TO VIDEO1 IC3001-98
CLK5
1/5
TO LENS DRIVE IC704-5
PWMOUT
PWM CONTROL
TO SENSOR IC106-9 IC106-10
S·CLK
S·DATA
CCD DRIVE DATA
IRQ
CLK
MAICON I/F
SSG
FCK2
FCK
C·SYNC
C·BLK
VD
HD
VDCG
TO ANALOG PRE PROCESS
DIS CONTROL
Y·DATA
FIELD MEMORY CONTROL
VCTRL. C
VCTRL. Y
H2RESET
WE
RE
CS
ALE
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

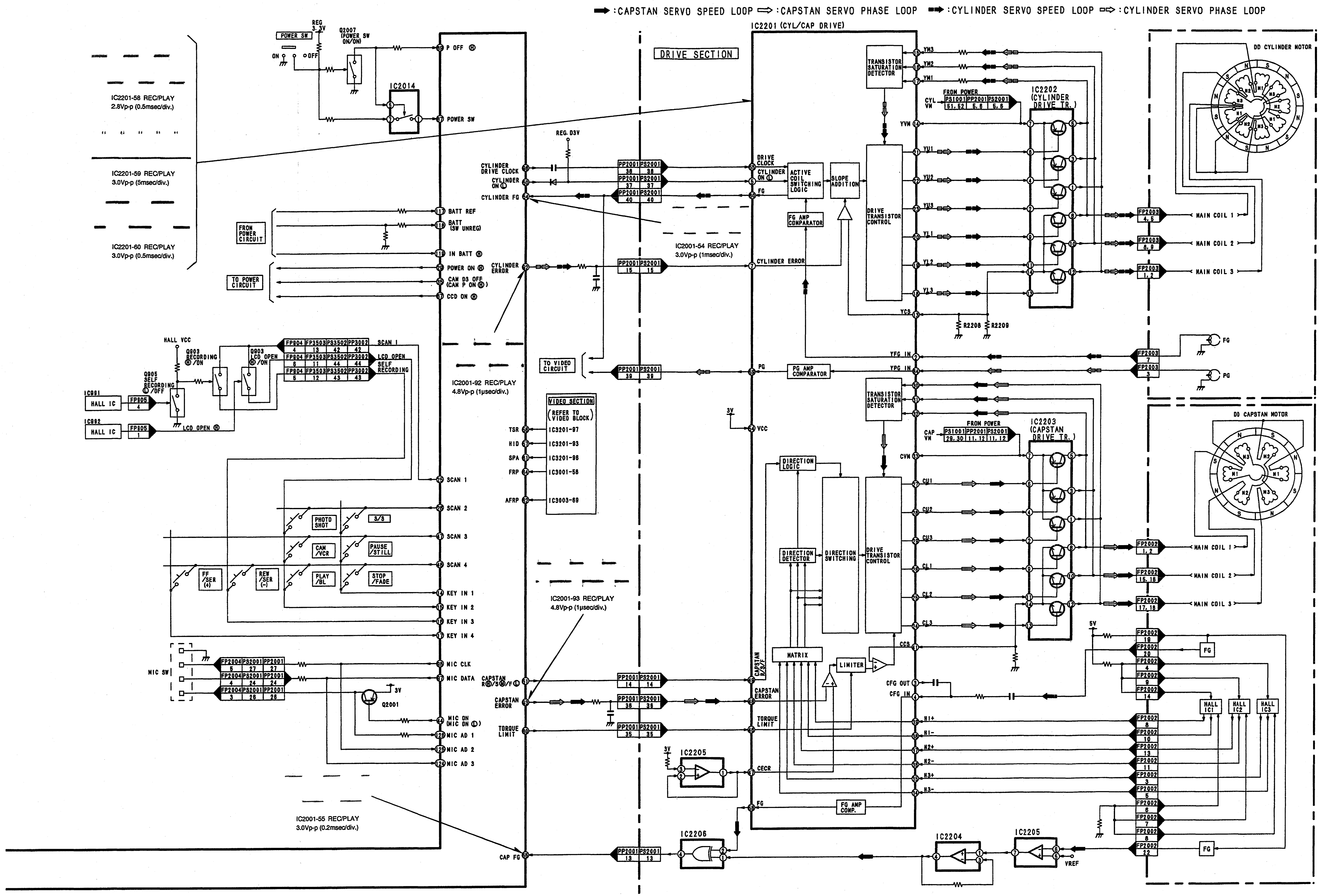
Back Page:
CCD DRIVE Section


IC301 (DSP)
FROM ANALOG PRE PROCESS
FP301 43
FP301 47
FP301 40
R
G
B
A/D
B·INV
PRE DSP
H·ZOOM DD CONV
NR
V·ZOOM
Y/C PROCESS
Y·OUT
C·OUT
INV
INH
PP301 PS3002 65~72 65~72
PP301 PS3002 12~19 12~19
PP301 PS3002 63 63
PP301 PS3002 64 64
TO VIDEO (DVIO IC3001)
FCK2
FCK
DATA IN/OUT
MAICON I/F
AF SIG DETECT
<VCTRL·Y>
<VCTRL·C>
<H2RESET>
C SYNC
C BLK
VD
HD
Y·DATA
WE
RE
CS
ALE
IRQ
IC304 (YM1)
MEMORY Y·OUT (R1Y1)
MEMORY Y·OUT (R2Y1)
MEMORY (WY1)
FM CTL LINE
CLOCK
IC303 (YM2)
MEMORY Y·OUT (R1Y2)
MEMORY Y·OUT (R2Y2)
Y·IN (WY2)
C·IN (WC2)
C·OUT (R2C2)
C·OUT (R1C2)
LENS DRIVE SECTION
IC701 (AF DSP)
IC702 (AF DRIVE)
DAOUT
ADR/DATA
FCA
FCB
F2C
SIG
DRIVE
PB2
PB1
MOD
MRA
MRB
MIX
LPF
LF1
LRO
LC1
LCMP
REFO
REF1
CAM5V
Q703
FOCUS MOTOR
LENS U
F. LENS
Z. LENS
MAGNET
MR
MRA
MRB
ENC
ZOOM MOTOR
IC703-14, 16 POWER ON
5.0Vp-p (20msec/div.)
ZOOM MOTOR DRIVE
IC703-9,11 POWER ON
5.0Vp-p (20msec/div.)
ZOOM MOTOR DRIVING
IC703 (ZOOM MOTOR DRIVE)
S1
S2
S3
S4
CK1
CW/CCW
ENABLE
RESET
ϕA
ϕB
QR303
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

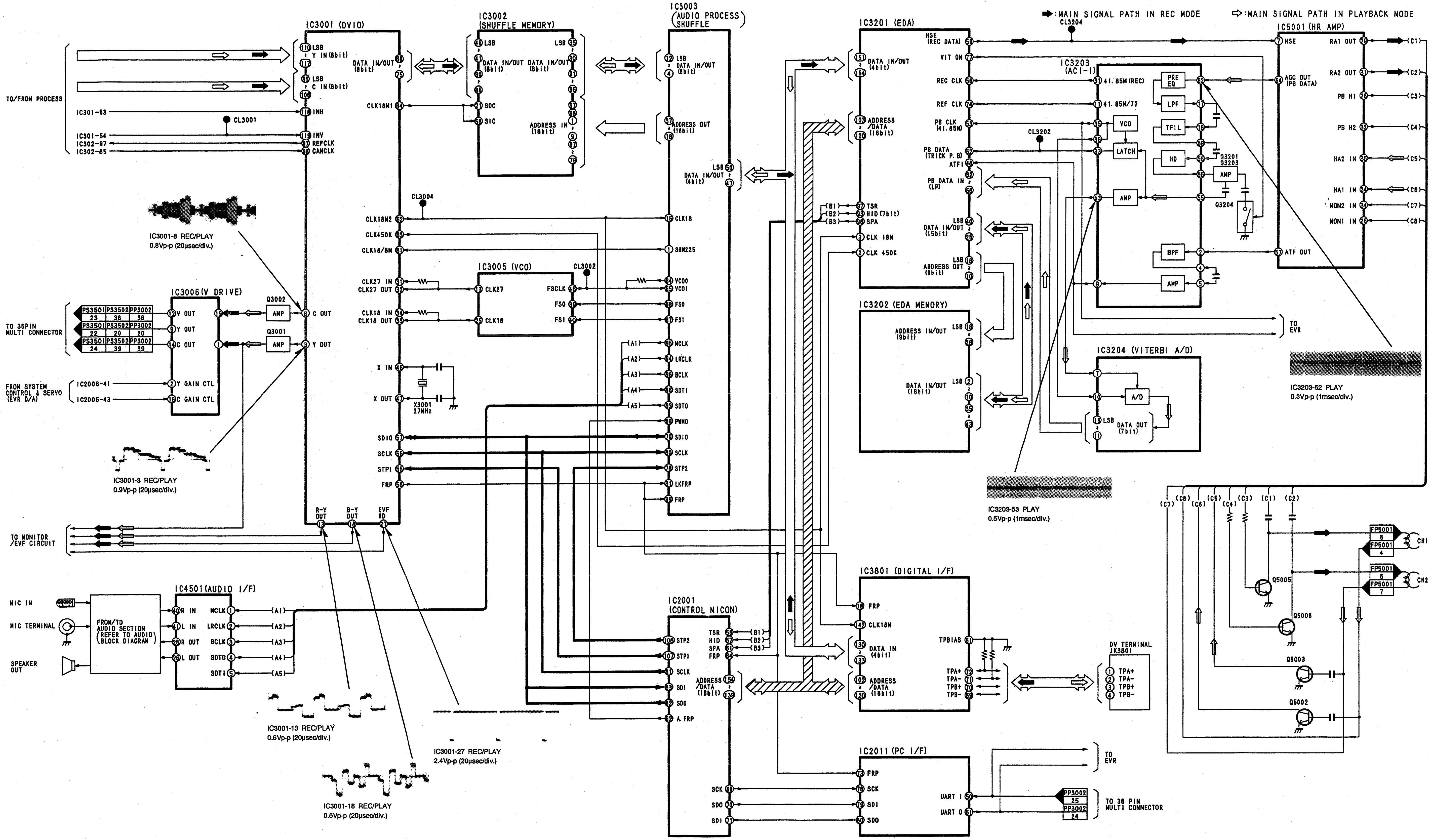
3-6. SYSTEM CONTROL & SERVO BLOCK DIAGRAM


IC2001
(SYSTEM CONTROL/SERVO MICROPROCESSOR)
IC2004
NOREG
3.3V REG.
VDD
VDD
VCC
VCC
VCC
VCC
VREF
AVCC
VCC2
VCC2
RST
IC2010
(RESET)
VDD
RST
TO EACH MICROPROCESSOR
X0
X1
X2001
(27MHz)
IC2001-21 REC/PLAY
3.6Vp-p (50nsec/div.)
REG3V
MODE SW
FP2004 PS2001 PP2001
23 33 33
22 18 18
21 32 32
POS 1
POS 2
POS 3
CASSETTE DOWN SW
2 25 25
CAS-DOWN
(CASSETTE DOWN Ⓛ)
S-TAB SW
7 23 23
STAB
(TAB DET Ⓛ)
TO IC5001
(HRAMP)
EJECT SW
S6704
FP6701 FP6002
10 10
REG 3.3V
EJECT SW
(EJECT Ⓗ)
T. REEL SENSOR
18 31 31
14 21 21
S. REEL SENSOR
17 20 20
15 30 30
3V
IC2007
T. REEL
S. REEL
Q2002, Q2003
SENSOR LED DRIVE
20 19 19
SNS LED
3V
3V
S. PHOTO
T. PHOTO
FP2004 FP2004 PP2001
12 22 22
30 17 17
T. PHOTO
S. PHOTO
QR2002
(T PHOTO ADJ1 Ⓗ:ON)
QR2002
(T PHOTO ADJ2 Ⓗ:ON)
QR2003
(S PHOTO ADJ1 Ⓗ:ON)
QR2003
(S PHOTO ADJ2 Ⓗ:ON)
SCK
SDO
SDI
EXTDC
REG. D3V
QR2009
IC2011 (PC I/F MICROPROCESSOR)
VTR LED
CAM LED
VTR
D6701
FP6701 FP6002
6 6
9 9
D6702
CAM
QR2010
(CAM LED DRIVE)
TO MONITOR
L/R CONT
UP/DOWN CONT
LCD WIDE
TO AUDIO
SPK ON Ⓛ
WIND SW Ⓗ
TO MONITOR
LCD BL CTL
BL BRIGHT Ⓗ
TO RS232C
UART 0
UART I
TO EVR /IC305
EVR SBI
X2
X1
X2003
(14.748MHz)
T PHOTO ADJ 1
T PHOTO ADJ 2
S PHOTO ADJ 1
S PHOTO ADJ 2
SCK
SD1
SD0
EXT P ON Ⓛ
IC2003
(CHARA GEN)
TO VIDEO /LCD
CHARACTOR OUT
CLK
DATA
CS
PCL
EVR SCK
EVR SBO
CG CS
CG PCL
IC2207
(LOADING MOTOR DRIVE)
UNLOAD
LOAD
PP2001 PS2001
16 16
34 34
RIN
FIN
OUT2
OUT1
FP2004
27, 28
25, 26
LOADING MOTOR
QR2004, QR2005
SOLENOID ON Ⓛ
SOLENOID DRIVE
PP2001 PS2001 FP2004
28, 29 28, 29 10, 11
SOLENOID
IC2002
(TIMER IC)
TM CLK
TM DO
TM DI
TM CS
SCK
SIO
CS
VDD
X IN
X OUT
X2002
(32KHz)
LI BATTERY
QR2001
IC2009
UNREG
3.8V REG.
QR2011
CRG LI
IC2012
QR2008
Q2008
CAM CLK
CAM/SP CONT
(CAM/SP)
CAM DO
CAM DI
TO MULTI CONECTOR
(EDIT SP)
IC2008
SW 5V
TO IC305
(CAM MICON)
(REFER TO PROCESS BLOCK)
DCS CLK
DCS DO
DCS DI
STP 1
STP 2
TO IC3001/IC3003
(DVIO/CAS)
(REFER TO VIDEO BLOCK)
ALE
RD
BLW
ADDRESS/DATA IN/OUT (16bit)
TO IC3801/IC3201/IC3003
(DIGITAL I/F/EDA/CAS)
IC2006 (D/A)
DAC LD
EE CLK
EE DO
LD
CLK
DI
M. COLOUR
M. SUB B
M. SUB R
M. CONTRAST
E. CONTRAST
M. GAMMA
E. GAMMA
E. BRIGHT
E. COLOR
E. SUB B
E. SUB R
M. RGB AMP
M. BRIGHT
IC601-8
IC601-27
IC601-28
IC601-33
IC602-33
IC601-45
IC602-45
IC602-43
IC602-8
IC602-27
IC602-28
IC601-29
IC601-43
TO LCD CTL CIRCUIT
IC2015
E. PLL
E. PLL
LCD WIDE
FROM IC2011-25
LCD. PLL
TO LCD/IF CIRCUIT
IC2005
(E² P ROM)
SK
DI
DO
CS
EE-DI
(DATA IN)
EE CS

Back Page:
PROCESS Section


➡:CAPSTAN SERVO SPEED LOOP ⇨:CAPSTAN SERVO PHASE LOOP ➡:CYLINDER SERVO SPEED LOOP ⇨:CYLINDER SERVO PHASE LOOP
IC2201 (CYL/CAP DRIVE)
DRIVE SECTION
IC2201-58 REC/PLAY 2.8Vp-p (0.5msec/div.)
IC2201-59 REC/PLAY 3.0Vp-p (5msec/div.)
IC2201-60 REC/PLAY 3.0Vp-p (0.5msec/div.)
IC2001-54 REC/PLAY 3.0Vp-p (1msec/div.)
IC2001-92 REC/PLAY 4.8Vp-p (1µsec/div.)
IC2001-93 REC/PLAY 4.8Vp-p (1µsec/div.)
IC2001-55 REC/PLAY 3.0Vp-p (0.2msec/div.)
POWER SW
REG 3.3V
Q2007 (POWER SW ON/ON)
ON
OFF
IC2014
P OFF
POWER SW
REG. D3V
CYLINDER DRIVE CLOCK
CYLINDER ON
CYLINDER FG
PP2001 PS2001
BATT REF
BATT (SW UNREG)
IN BATT
FROM POWER CIRCUIT
TO POWER CIRCUIT
POWER ON
CAM DS OFF (CAM P ON)
CCD ON
CYLINDER ERROR
TO VIDEO CIRCUIT
VIDEO SECTION (REFER TO VIDEO BLOCK)
TSR IC3201-97
HID IC3201-93
SPA IC3201-96
FRP IC3001-58
AFRP IC3003-69
HALL VCC
Q903 RECORDING /ON
Q903 LCD OPEN /ON
Q905 SELF RECORDING /OFF
IC981 HALL IC
IC982 HALL IC
FP805
LCD OPEN
FP804 FP3503 PS3502 PP3002
SCAN 1
LCD OPEN
SELF RECORDING
SCAN 1
SCAN 2
SCAN 3
SCAN 4
KEY IN 1
KEY IN 2
KEY IN 3
KEY IN 4
PHOTO SHOT
S/S
CAM /VCR
PAUSE /STILL
FF /SER (+)
REW /SER (-)
PLAY /BL
STOP /FADE
MIC SW
FP2004 PS2001 PP2001
MIC CLK
MIC DATA
Q2001
3V
MIC ON (MIC ON)
MIC AD 1
MIC AD 2
MIC AD 3
CAPSTAN R/S/F
CAPSTAN ERROR
TORQUE LIMIT
CAP FG
DRIVE CLOCK
CYLINDER ON
FG
ACTIVE COIL SWITCHING LOGIC
SLOPE ADDITION
FG AMP COMPARATOR
CYLINDER ERROR
TRANSISTOR SATURATION DETECTOR
DRIVE TRANSISTOR CONTROL
YH3
YH2
YH1
FROM POWER
CYL VM
PS1001 PP2001 PS2001
51, 52 5, 6 5, 6
IC2202 (CYLINDER DRIVE TR.)
YVM
YU1
YU2
YU3
YL1
YL2
YL3
YCS
R2208
R2209
DD CYLINDER MOTOR
FP2003
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
YFG IN
YPG IN
FG
PG
PG AMP COMPARATOR
3V
VCC
FROM POWER
CAP VM
29, 30 11, 12 11, 12
IC2203 (CAPSTAN DRIVE TR.)
CVM
CU1
CU2
CU3
CL1
CL2
CL3
CCS
DIRECTION LOGIC
DIRECTION DETECTOR
DIRECTION SWITCHING
DRIVE TRANSISTOR CONTROL
DD CAPSTAN MOTOR
FP2002
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
MATRIX
LIMITER
CAPSTAN R/S/F
CAPSTAN ERROR
TORQUE LIMIT
CFG OUT
CFG IN
5V
HALL IC1
HALL IC2
HALL IC3
H1+
H1-
H2+
H2-
H3+
H3-
IC2205
CECR
FG
FG AMP COMP.
IC2206
IC2204
IC2205
VREF

3-7. VIDEO BLOCK DIAGRAM


➡:MAIN SIGNAL PATH IN REC MODE
⇨:MAIN SIGNAL PATH IN PLAYBACK MODE
IC3001 (DVIO)
IC3002 (SHUFFLE MEMORY)
IC3003 (AUDIO PROCESS SHUFFLE)
IC3201 (EDA)
IC3202 (EDA MEMORY)
IC3203 (ACI-I)
IC3204 (VITERBI A/D)
IC5001 (HR AMP)
IC3005 (VCO)
IC3006 (V DRIVE)
IC4501 (AUDIO I/F)
IC2001 (CONTROL MICON)
IC3801 (DIGITAL I/F)
IC2011 (PC I/F)
TO/FROM PROCESS
IC301-53
IC301-54
IC302-87
IC302-85
CL3001
CL3002
CL3004
CL3202
CL3204
Y IN (8bit)
C IN (8bit)
INH
INV
REFCLK
CANCLK
DATA IN/OUT (8bit)
CLK18M1
CLK18M2
CLK450K
CLK18/8M
CLK27 IN
CLK27 OUT
CLK18 IN
CLK18 OUT
X IN
X OUT
X3001 27MHz
SDIO
SCLK
STPI
FRP
R-Y OUT
B-Y OUT
EVF HD
SOC
SIC
ADDRESS IN (16bit)
ADDRESS OUT (16bit)
DATA IN/OUT (4bit)
CLK18
SHM225
VCO0
VCO1
FS0
FS1
FSCLK
MCLK
LRCLK
BCLK
SDTI
SDTO
PWMO
STP2
LKFRP
TO 36PIN MULTI CONNECTOR
PS3501 PS3502 PP3002
V OUT
Y OUT
C OUT
Y GAIN CTL
C GAIN CTL
Q3002 AMP
Q3001 AMP
FROM SYSTEM CONTROL & SERVO (EVR D/A)
IC2006-41
IC2006-43
TO MONITOR /EVF CIRCUIT
MIC IN
MIC TERMINAL
SPEAKER OUT
FROM/TO AUDIO SECTION (REFER TO AUDIO BLOCK DIAGRAM)
R IN
L IN
R OUT
L OUT
(A1) (A2) (A3) (A4) (A5)
(B1) (B2) (B3)
TSR
HID
SPA
A.FRP
SCK
SDO
SDI
ADDRESS /DATA (16bit)
HSE (REC DATA)
VIT ON
REC CLK
REF CLK
PB CLK (41.85M)
PB DATA (TRICK P.B)
ATFI
PB DATA IN (LP)
DATA IN/OUT (15bit)
ADDRESS OUT (9bit)
HID (7bit)
CLK 18M
CLK 450K
41.85M (REC)
41.85M/72
VCO
LATCH
AMP
PRE EQ
LPF
TFIL
HD
BPF
Q3201 Q3203
Q3204
ADDRESS IN/OUT (9bit)
DATA IN/OUT (16bit)
A/D
DATA OUT (7bit)
TO EVR
HSE
RA1 OUT
RA2 OUT
PB H1
PB H2
HA2 IN
HA1 IN
MON2 IN
MON1 IN
AGC OUT (PB DATA)
ATF OUT
(C1) (C2) (C3) (C4) (C5) (C6) (C7) (C8)
FP5001
CH1
CH2
Q5005
Q5006
Q5003
Q5002
DV TERMINAL JK3801
TPA+
TPA-
TPB+
TPB-
TPBIAS
DATA IN (4bit)
CLK18M
UART I
UART O
TO 36 PIN MULTI CONNECTOR
PP3002 25
PP3002 24

IC3001-8 REC/PLAY
0.8Vp-p (20μsec/div.)

IC3001-3 REC/PLAY
0.9Vp-p (20μsec/div.)

IC3001-13 REC/PLAY
0.6Vp-p (20μsec/div.)

IC3001-18 REC/PLAY
0.5Vp-p (20μsec/div.)

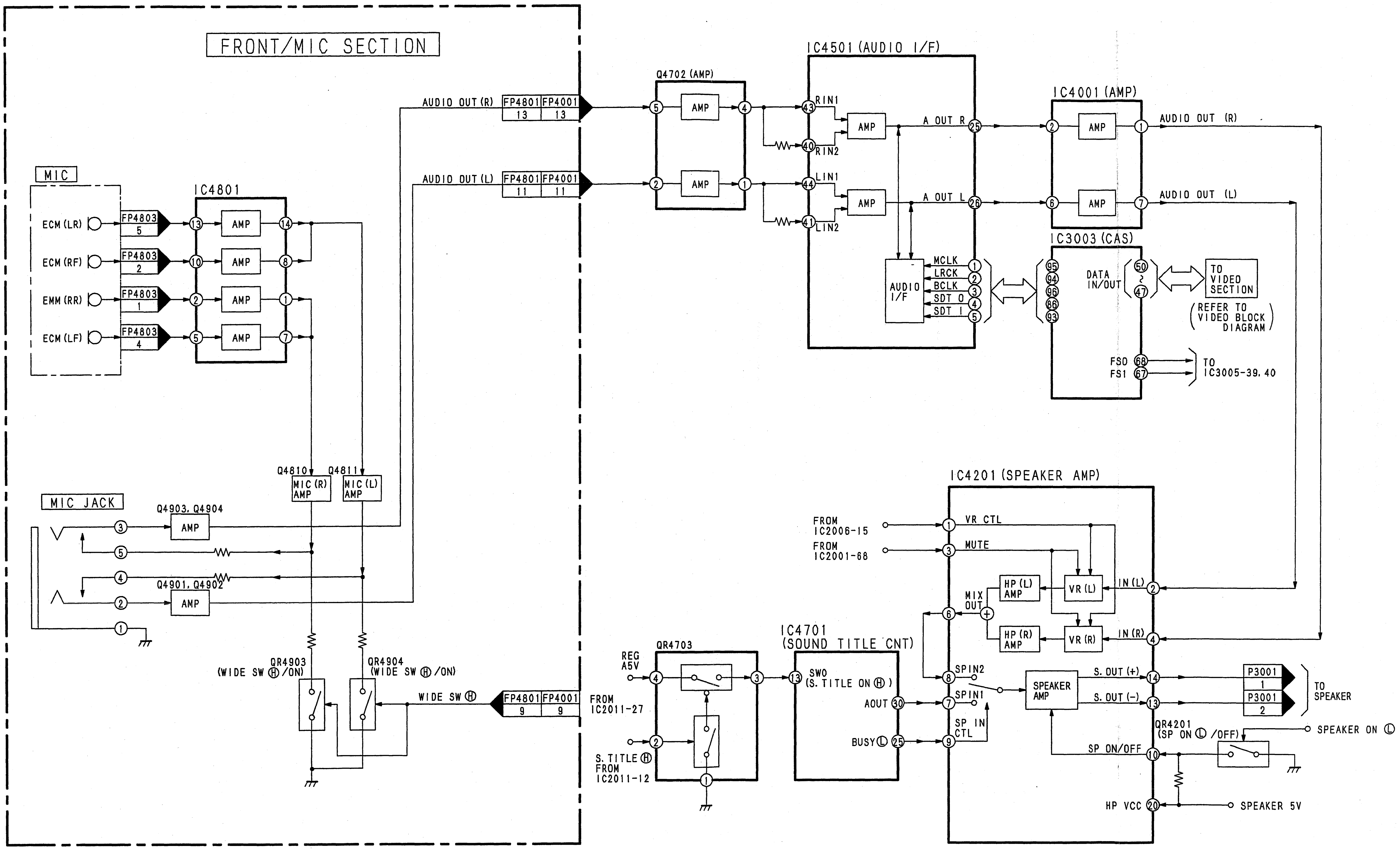
IC3001-27 REC/PLAY
2.4Vp-p (20μsec/div.)

IC3203-53 PLAY
0.5Vp-p (1msec/div.)

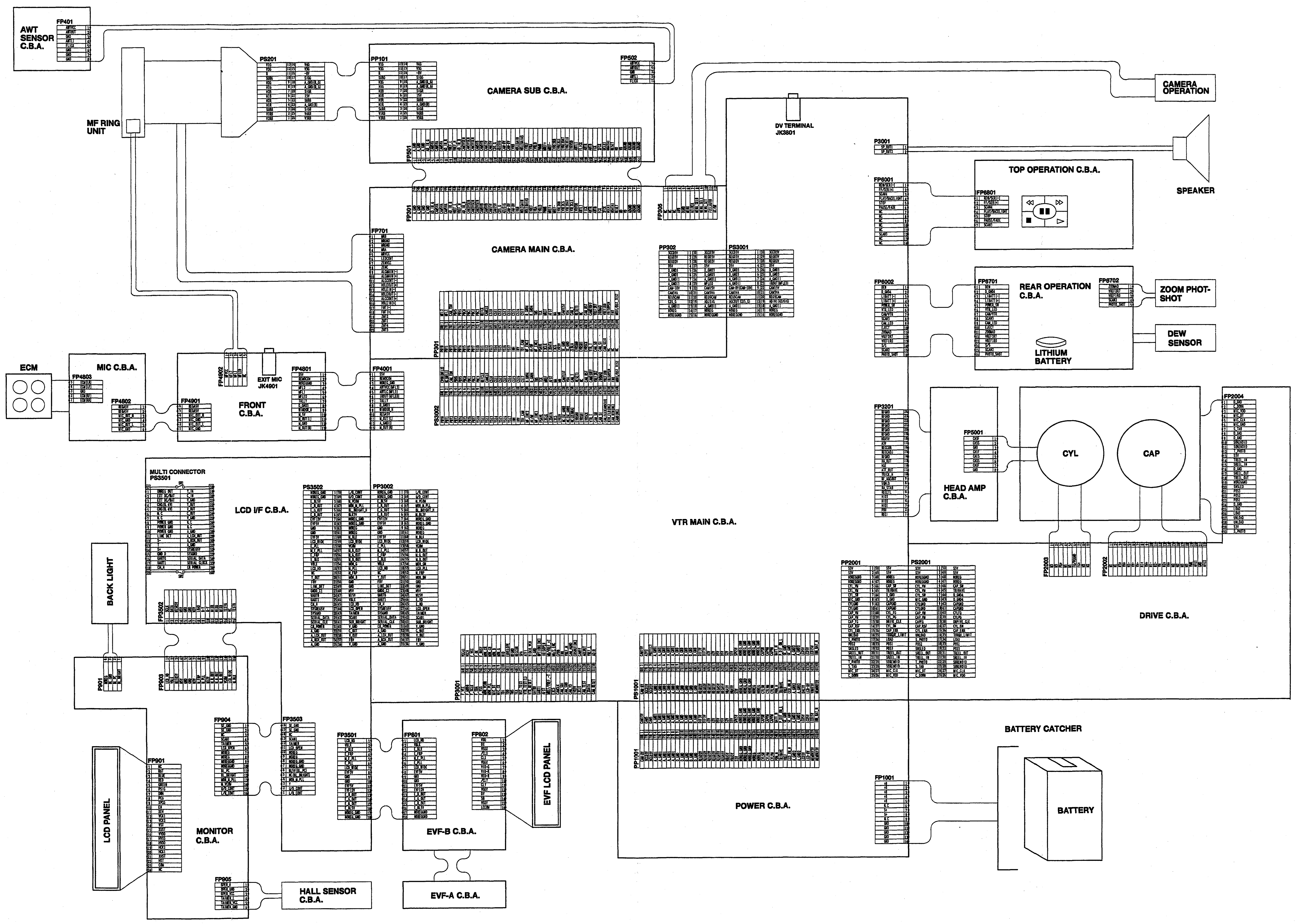
IC3203-62 PLAY
0.3Vp-p (1msec/div.)

Back Page:
SYSTEM CTL & SERVO Section

3-8. AUDIO BLOCK DIAGRAM

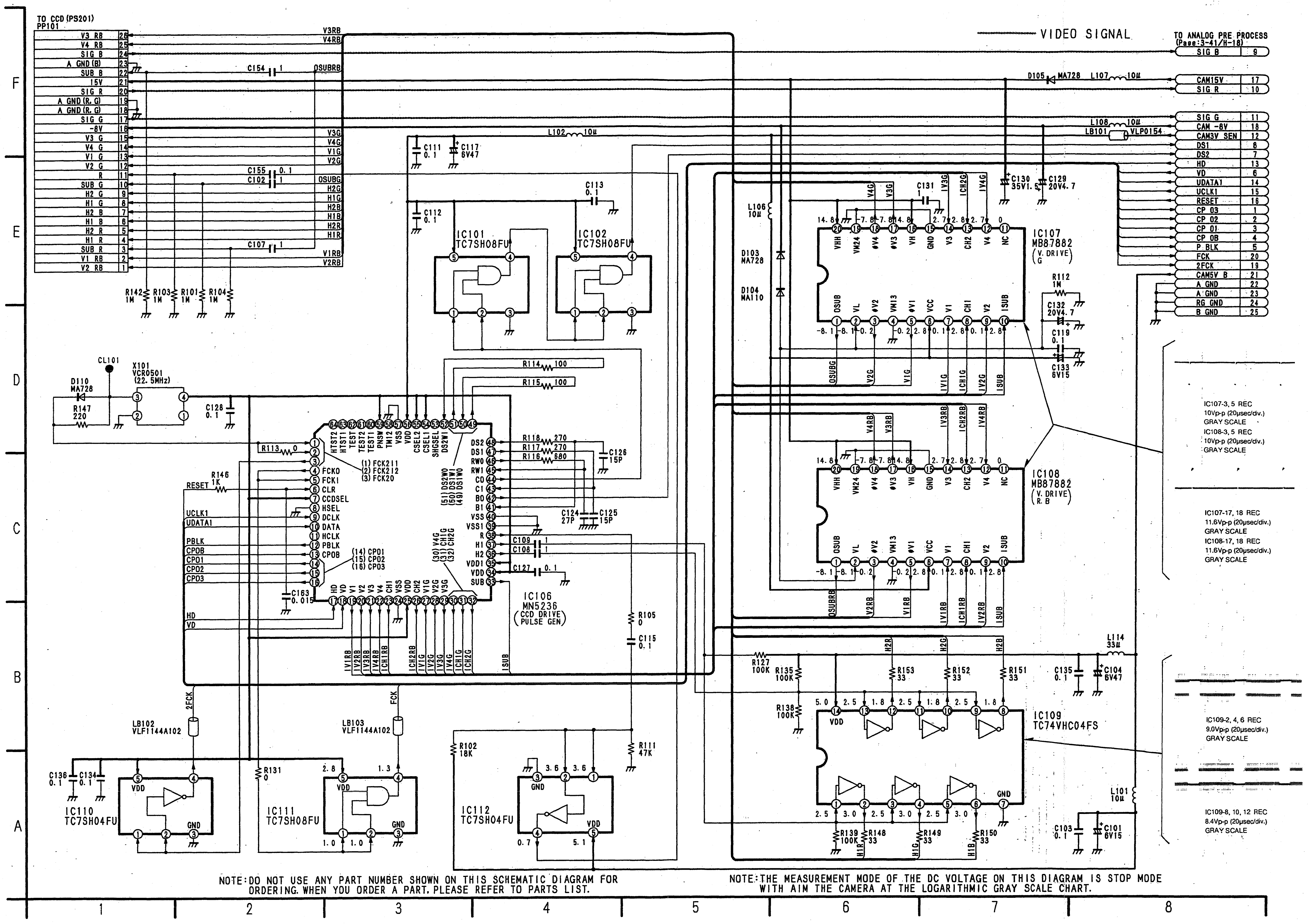

FRONT/MIC SECTION
MIC
ECM (LR)
ECM (RF)
EMM (RR)
ECM (LF)
FP4803 5
FP4803 2
FP4803 1
FP4803 4
IC4801
AMP
AUDIO OUT (R)
AUDIO OUT (L)
FP4801 FP4001 13 13
FP4801 FP4001 11 11
Q4810
Q4811
MIC (R) AMP
MIC (L) AMP
MIC JACK
Q4903, Q4904
Q4901, Q4902
QR4903 (WIDE SW Ⓗ/ON)
QR4904 (WIDE SW Ⓗ/ON)
WIDE SW Ⓗ
FP4801 FP4001 9 9
Q4702 (AMP)
IC4501 (AUDIO I/F)
RIN1
RIN2
LIN1
LIN2
A OUT R
A OUT L
AUDIO I/F
MCLK
LRCK
BCLK
SDT O
SDT I
IC4001 (AMP)
AUDIO OUT (R)
AUDIO OUT (L)
IC3003 (CAS)
DATA IN/OUT
TO VIDEO SECTION
(REFER TO VIDEO BLOCK DIAGRAM)
FS0
FS1
TO IC3005-39, 40
IC4201 (SPEAKER AMP)
FROM IC2006-15
FROM IC2001-68
VR CTL
MUTE
HP (L) AMP
HP (R) AMP
VR (L)
VR (R)
IN (L)
IN (R)
MIX OUT
SPIN2
SPIN1
SP IN CTL
SPEAKER AMP
S. OUT (+)
S. OUT (−)
SP ON/OFF
HP VCC
P3001 1
P3001 2
TO SPEAKER
QR4201 (SP ON Ⓛ /OFF)
SPEAKER ON Ⓛ
SPEAKER 5V
QR4703
REG A5V
FROM IC2011-27
S. TITLE Ⓗ FROM IC2011-12
IC4701 (SOUND TITLE CNT)
SWO (S. TITLE ON Ⓗ)
AOUT
BUSY Ⓛ

3-9. INTERCONNECTION SCHEMATIC DIAGRAM


AWT SENSOR C.B.A.
FP401
MF RING UNIT
PS201
PP101
CAMERA SUB C.B.A.
FP502
FP501
CAMERA OPERATION
DV TERMINAL JK3801
P3001
SPEAKER
TOP OPERATION C.B.A.
FP6001
FP6801
FP301
FP305
FP701
CAMERA MAIN C.B.A.
PP302
PS3001
FP6002
FP6701
REAR OPERATION C.B.A.
FP6702
ZOOM PHOT-SHOT
DEW SENSOR
LITHIUM BATTERY
PP301
PS3002
ECM
MIC C.B.A.
FP4803
FP4802
FP4901
FP4902
EXT MIC JK4901
FRONT C.B.A.
FP4801
FP4001
FP3201
FP5001
HEAD AMP C.B.A.
CYL
CAP
FP2004
MULTI CONNECTOR PS3501
LCD I/F C.B.A.
PS3502
PP3002
VTR MAIN C.B.A.
BACK LIGHT
FP3502
FP2003
FP2002
PP2001
PS2001
DRIVE C.B.A.
P901
FP903
PP3001
PS1001
PP1001
BATTERY CATCHER
FP904
FP3503
FP3501
FP601
FP602
EVF LCD PANEL
FP901
LCD PANEL
MONITOR C.B.A.
EVF-B C.B.A.
FP1001
POWER C.B.A.
BATTERY
FP905
HALL SENSOR C.B.A.
EVF-A C.B.A.

Back Page:
AUDIO Section

3-10. SENSOR SCHEMATIC DIAGRAM



TO CCD (PS201)
PP101
V3 RB 26
V4 RB 25
SIG B 24
A GND (B) 23
SUB B 22
15V 21
SIG R 20
A GND (R, G) 19
A GND (R, G) 18
SIG G 17
-8V 16
V3 G 15
V4 G 14
V1 G 13
V2 G 12
R 11
SUB G 10
H2 G 9
H1 G 8
H2 B 7
H1 B 6
H2 R 5
H1 R 4
SUB R 3
V1 RB 2
V2 RB 1
V3RB
V4RB
C154 1
OSUBRB
V3G
V4G
V1G
V2G
C155 0.1
C102 1
OSUBG
H2G
H1G
H2B
H1B
H2R
H1R
C107 1
V1RB
V2RB
R142 1M
R103 1M
R101 1M
R104 1M
L102 10µ
C111 0.1
C117 6V47
C112 0.1
C113 0.1
IC101 TC7SH08FU
IC102 TC7SH08FU
CL101
X101 VCR0501 (22.5MHz)
D110 MA728
R147 220
C128 0.1
R114 100
R115 100
R113 0
R146 1K
RESET
UCLK1
UDATA1
PBLK
CPOB
CPO1
CPO2
CPO3
HD
VD
HTST2 HTST1 TEST TEST2 PNSW TM12 VSS VDD CSEL2 CSEL1 SHGSEL DS2W1
FCKO FCK1 CLR CCDSEL HSEL DCLK DATA HCLK PBLK CPOB
(1) FCK211
(2) FCK212
(3) FCK20
(14) CPO1
(15) CPO2
(16) CPO3
(51) DS2WO
(50) DS1W1
(49) DS1WO
(30) V4G
(31) CH1G
(32) CH2G
DS2 DS1 RWO RW1 CO C1 BO B1 VSS VSS1 R H1 H2 VDD1 VDD SUB
R118 270
R117 270
R116 680
C126 15P
C124 27P
C125 15P
C109 1
C108 1
C127 0.1
C163 0.015
IC106 MN5236 (CCD DRIVE PULSE GEN)
HD VD V1 V2 V3 V4 CH1 VSS VDD CH2 V1G V2G V3G
IV1RB IV2RB IV3RB IV4RB ICH1RB ICH2RB IV1G IV2G IV3G IV4G ICH1G ICH2G ISUB
R105 0
C115 0.1
R111 47K
R102 18K
2FCK
FCK
LB102 VLF1144A102
LB103 VLF1144A102
C136 0.1
C134 0.1
IC110 TC7SH04FU
R131 0
IC111 TC7SH08FU
IC112 TC7SH04FU
VDD GND
2.8 1.3 1.0 1.0 3.6 3.6 0.7 5.1
— VIDEO SIGNAL
TO ANALOG PRE PROCESS (Page:3-41/H-18)
SIG B 9
D105 MA728 L107 10µ
CAM15V 17
SIG R 10
SIG G 11
L108 10µ
LB101 VLP0154
CAM -8V 18
CAM3V SEN 12
DS1 8
DS2 7
HD 13
VD 6
UDATA1 14
UCLK1 15
RESET 16
CP 03 1
CP 02 2
CP 01 3
CP 0B 4
P BLK 5
FCK 20
2FCK 19
CAM5V B 21
A GND 22
A GND 23
RG GND 24
B GND 25
C130 35V1.5
C129 20V4.7
C131 1
L106 10µ
D103 MA728
D104 MA110
IC107 MB87882 (V. DRIVE G)
VHH VM24 φV4 φV3 VH GND V3 CH2 V4 NC
OSUB VL φV2 VM13 φV1 VCC V1 CH1 V2 ISUB
14.8 -7.8 -7.8 14.8 2.7 2.8 2.7 0
-8.1 -8.1 -0.2 -0.2 2.8 0.1 2.8 0.1 2.8
R112 1M
C132 20V4.7
C119 0.1
C133 6V15
OSUBG V2G V1G IV1G ICH1G IV2G ISUB
IV3G ICH2G IV4G
IV3RB ICH2RB IV4RB V4RB V3RB
IC108 MB87882 (V. DRIVE R. B)
OSUBRB V2RB V1RB IV1RB ICH1RB IV2RB ISUB
H2R H2G H2B
L114 33µ
R127 100K
R135 100K
R153 33
R152 33
R151 33
C135 0.1
C104 6V47
R138 100K
5.0 2.5 1.8 2.5 1.8 2.5 1.8
IC109 TC74VHC04FS
2.5 3.0 2.5 3.0 2.5 3.0
R139 100K
R148 33
R149 33
R150 33
H1R H1G H1B
L101 10µ
C103 0.1
C101 6V15
1 2 3 4 5 6 7 8
A B C D E F

IC107-3, 5 REC
10Vp-p (20µsec/div.)
GRAY SCALE
IC108-3, 5 REC
10Vp-p (20µsec/div.)
GRAY SCALE

IC107-17, 18 REC
11.6Vp-p (20µsec/div.)
GRAY SCALE
IC108-17, 18 REC
11.6Vp-p (20µsec/div.)
GRAY SCALE

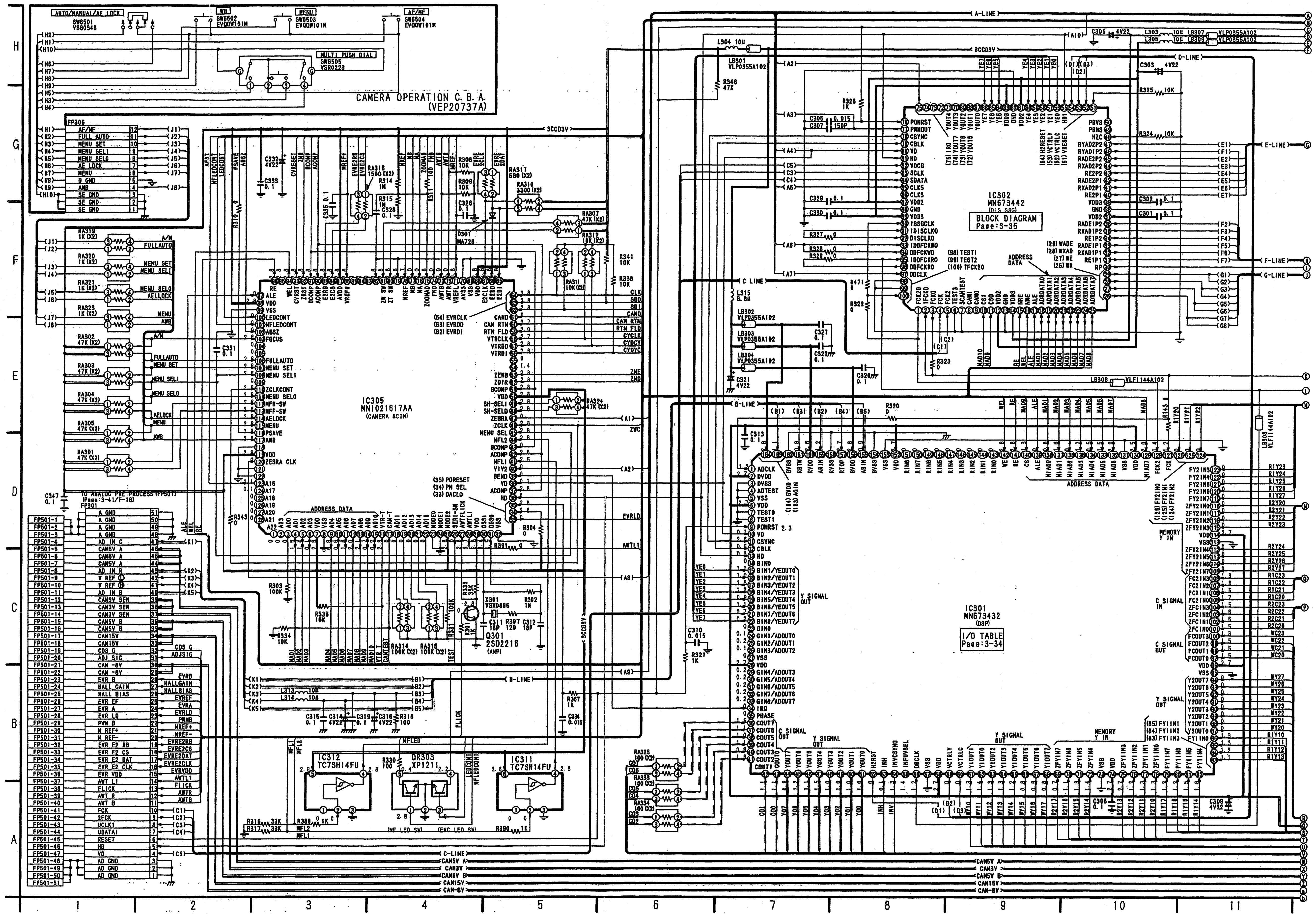
IC109-2, 4, 6 REC
9.0Vp-p (20µsec/div.)
GRAY SCALE

IC109-8, 10, 12 REC
8.4Vp-p (20µsec/div.)
GRAY SCALE

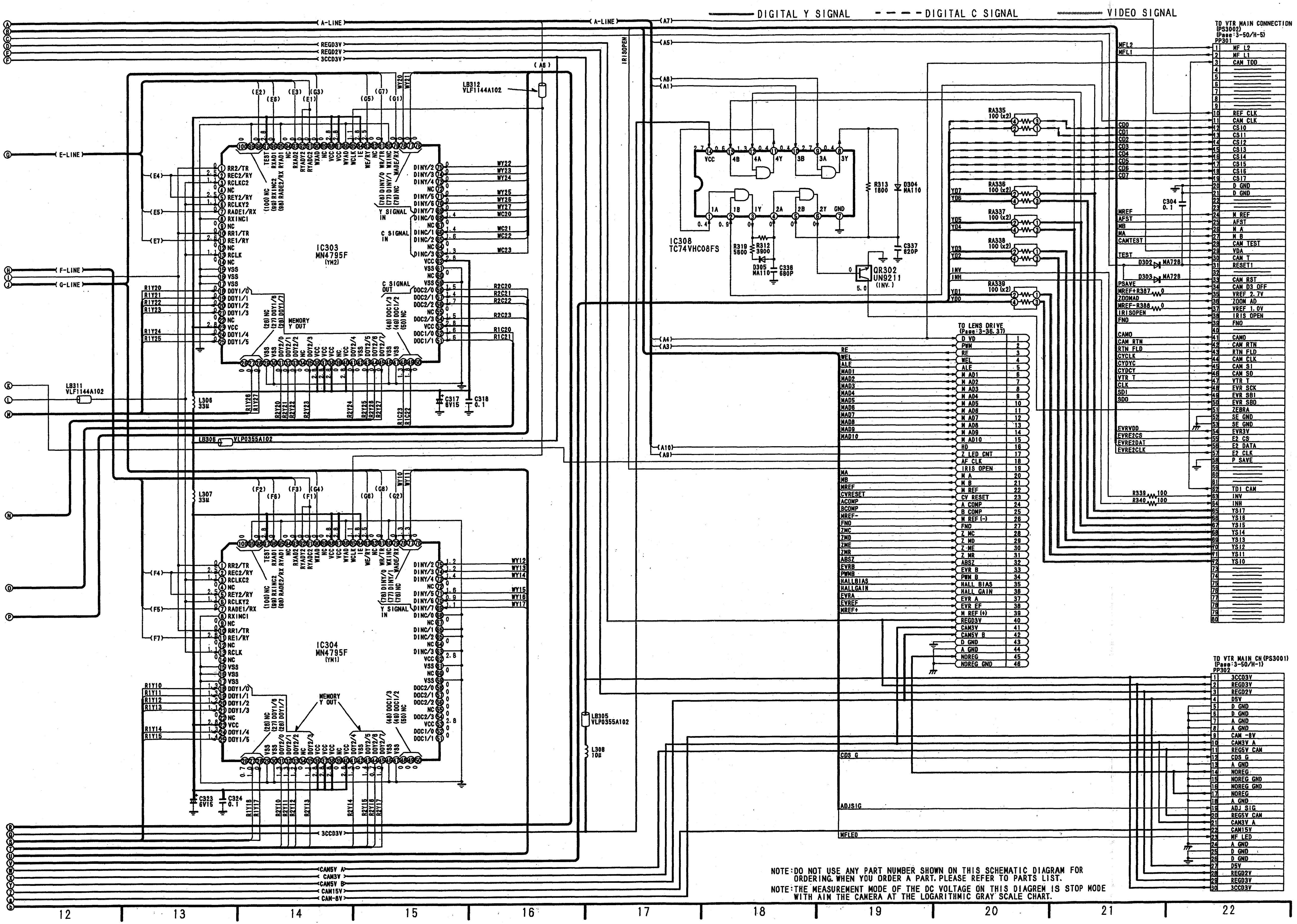
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

3-11. PROCESS & CAMERA OPERATION SCHEMATIC DIAGRAM


CAMERA OPERATION C.B.A. (VEP20737A)
AUTO/MANUAL/AE LOCK SW6501 VSS0348
WB SW6502 EVQQW101M
MENU SW6503 EVQQW101M
AF/MF SW6504 EVQQW101M
MULTI PUSH DIAL SW6505 VSR0223
FP305
FP301
TO ANALOG PRE-PROCESS (FP501) (Page:3-41/F-18)
IC305 MN1021617AA (CAMERA μCON)
ADDRESS DATA
IC302 MN673442 (DIS SSG)
BLOCK DIAGRAM Page:3-35
IC301 MN673432 (DSP)
I/O TABLE Page:3-34
IC312 TC7SH14FU
QR303 XP1211
IC311 TC7SH14FU
Q301 2SD2216 (AMP)
X301 VSX0686
A-LINE
B-LINE
C-LINE
D-LINE
E-LINE
F-LINE
G-LINE
3CCD3V
CAM5V A
CAM3V
CAM5V B
CAM15V
CAM-8V
Y SIGNAL OUT
C SIGNAL IN
C SIGNAL OUT
Y SIGNAL OUT
MEMORY Y IN
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

Back Page:
SENSOR Section


DIGITAL Y SIGNAL
DIGITAL C SIGNAL
VIDEO SIGNAL
A-LINE
REGD3V
REGD2V
3CCD3V
E-LINE
F-LINE
G-LINE
IRISOPEN
IC303
MN4795F
(YN2)
IC304
MN4795F
(YN1)
MEMORY Y OUT
Y SIGNAL IN
C SIGNAL IN
C SIGNAL OUT
LB312
VLF1144A102
LB311
VLF1144A102
LB306
VLP0355A102
LB305
VLP0355A102
L306
33μ
L307
33μ
L308
10μ
C317
6V15
C318
0.1
C323
6V15
C324
0.1
IC308
TC74VHC08FS
R313
1800
D304
MA110
R319
5600
R312
3900
D305
MA110
C336
680P
C337
820P
QR302
UN9211
(INV.)
RA335
100 (x2)
RA336
100 (x2)
RA337
100 (x2)
RA338
100 (x2)
RA339
100 (x2)
C304
0.1
D302
MA728
D303
MA728
R339
100
R340
100
TO VTR MAIN CONNECTION
(PS3002)
(Page:3-50/H-5)
PP301
TO LENS DRIVE
(Page:3-36,37)
TO VTR MAIN CN (PS3001)
(Page:3-50/H-1)
PP302
CAM5V A
CAM3V
CAM5V B
CAM15V
CAM-8V
12
13
14
15
16
17
18
19
20
21
22

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGREM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

PROCESS I/O TABLE

IC301 (MN673432): DSP

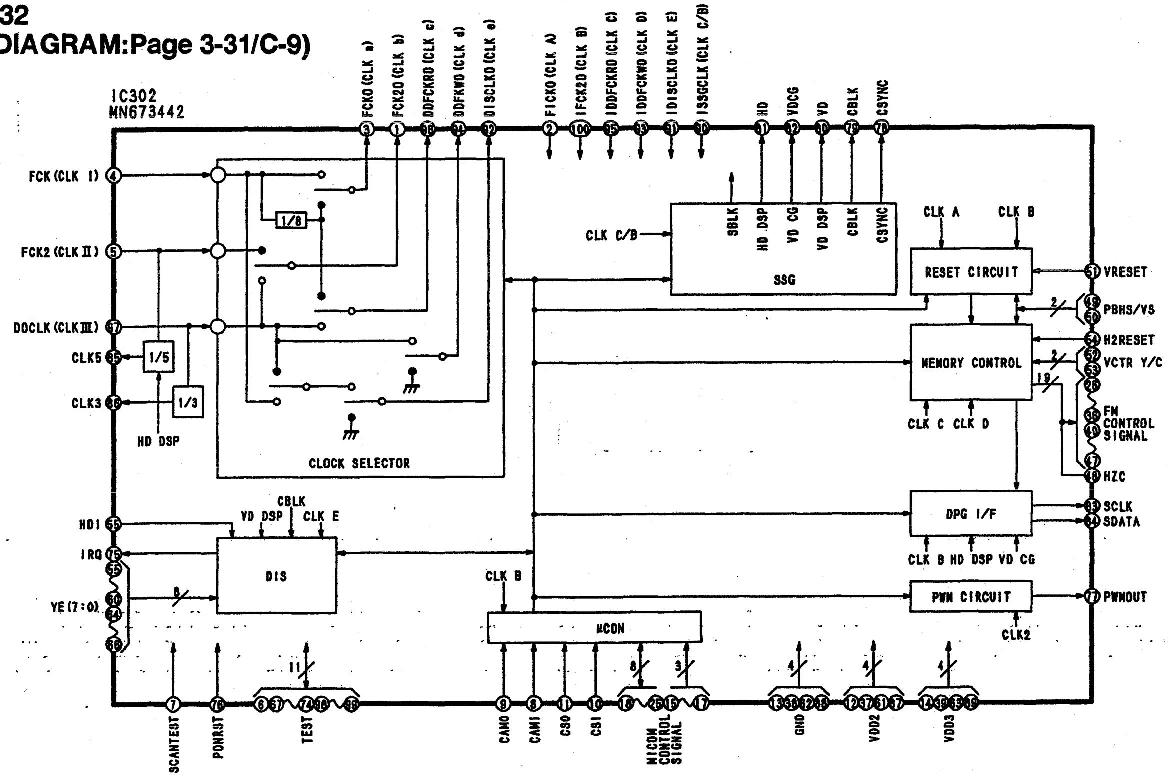
PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	ADCLK	I	Internal A/D Clock
2	DVDD	—	Internal A/D Digital Voltage
3	DVSS	—	Internal A/D Digital GND
4	ADTEST	I	Internal A/D Test Signal
5	VSS	—	GND
6	VDD	—	Voltage
7	TEST0	I	Test Mode Signal (bit0)
8	TEST1	I	Test Mode Signal (bit1)
9	PONRST	I	Reset: Power On
10	VD	I	VD Signal
11	CSYNC	I	CSYNC Signal
12	CBLK	I	CBLK Signal
13	HD	I	HD Signal
14	BIN0	I	Bch Digital Signal (bit0)
15	BIN1/YEOUT0	I/O	Bch Digital Signal (bit1) Input and Ye Signal (bit0) Output
16	BIN2/YEOUT1	I/O	Bch Digital Signal (bit2) Input and Ye Signal (bit1) Output
17	BIN3/YEOUT2	I/O	Bch Digital Signal (bit3) Input and Ye Signal (bit2) Output
18	BIN4/YEOUT3	I/O	Bch Digital Signal (bit4) Input and Ye Signal (bit3) Output
19	BIN5/YEOUT4	I/O	Bch Digital Signal (bit5) Input and Ye Signal (bit4) Output
20	BIN6/YEOUT5	I/O	Bch Digital Signal (bit6) Input and Ye Signal (bit5) Output
21	BIN7/YEOUT6	I/O	Bch Digital Signal (bit7) Input and Ye Signal (bit6) Output
22	BIN8/YEOUT7	I/O	Bch Digital Signal (bit8) Input and Ye Signal (bit7) Output
23	GIN0	I	Gch Digital Signal (bit0)
24	GIN1/ADOUT0	I/O	Gch Digital Signal (bit1) Input and Internal A/D Signal (bit0) Output
25	GIN2/ADOUT1	I/O	Gch Digital Signal (bit2) Input and Internal A/D Signal (bit1) Output
26	GIN3/ADOUT2	I/O	Gch Digital Signal (bit3) Input and Internal A/D Signal (bit2) Output
27	VSS	—	GND
28	VDD	—	Voltage
29	GIN4/ADOUT3	I/O	Gch Digital Signal (bit4) Input and Internal A/D Signal (bit3) Output
30	GIN5/ADOUT4	I/O	Gch Digital Signal (bit5) Input and Internal A/D Signal (bit4) Output
31	GIN6/ADOUT5	I/O	Gch Digital Signal (bit6) Input and Internal A/D Signal (bit5) Output
32	GIN7/ADOUT6	I/O	Gch Digital Signal (bit7) Input and Internal A/D Signal (bit6) Output
33	GIN8/ADOUT7	I/O	Gch Digital Signal (bit8) Input and Internal A/D Signal (bit7) Output
34	IRQ	O	BM Data Read Out Offering Signal
35	PHASE	O	PHASE Signal
36	COUT7	O	C Signal (bit7)
37	COUT6	O	C Signal (bit6)
38	COUT5	O	C Signal (bit5)
39	COUT4	O	C Signal (bit4)
40	COUT3	O	C Signal (bit3)
41	COUT2	O	C Signal (bit2)
42	COUT1	O	C Signal (bit1)
43	COUT0	O	C Signal (bit0)
44	YOUT7	O	Y Signal (bit7)
45	YOUT6	O	Y Signal (bit6)
46	YOUT5	O	Y Signal (bit5)
47	YOUT4	O	Y Signal (bit4)
48	YOUT3	O	Y Signal (bit3)
49	YOUT2	O	Y Signal (bit2)
50	YOUT1	O	Y Signal (bit1)
51	YOUT0	O	Y Signal (bit0)
52	H2RST	O	H2 Reset Signal
53	INH	O	INH Signal
54	INVCSYNO	O	INV/CSYNC Signal
55	INFUVSEL	O	INF/UVSEL Signal
56	DDCLK	I	Clock (13.5MHz)
57	VSS	—	GND
58	VDD	—	Voltage
59	VCTRLY	I	Field Memory Control Signal for Y Signal
60	VCTRLC	I	Field Memory Control Signal for C Signal
61	Y1OUT0	O	NR Section Y1 Signal (bit0)
62	Y1OUT1	O	NR Section Y1 Signal (bit1)
63	Y1OUT2	O	NR Section Y1 Signal (bit2)
64	Y1OUT3	O	NR Section Y1 Signal (bit3)
65	Y1OUT4	O	NR Section Y1 Signal (bit4)
66	Y1OUT5	O	NR Section Y1 Signal (bit5)
67	Y1OUT6	O	NR Section Y1 Signal (bit6)
68	Y1OUT7	O	NR Section Y1 Signal (bit7)
69	ZFY1IN7	I	Y1 Signal (bit7) for V Zoom
70	ZFY1IN6	I	Y1 Signal (bit6) for V Zoom
71	ZFY1IN5	I	Y1 Signal (bit5) for V Zoom
72	ZFY1IN4	I	Y1 Signal (bit4) for V Zoom
73	VSS	—	GND
74	VDD	—	Voltage
75	ZFY1IN3	I	Y1 Signal (bit3) for V Zoom
76	ZFY1IN2	I	Y1 Signal (bit2) for V Zoom
77	ZFY1IN1	I	Y1 Signal (bit1) for V Zoom
78	ZFY1IN0	I	Y1 Signal (bit0) for V Zoom
79	FY1IN7	I	Y1 Signal (bit7) for NR
80	FY1IN6	I	Y1 Signal (bit6) for NR
81	FY1IN5	I	Y1 Signal (bit5) for NR
82	FY1IN4	I	Y1 Signal (bit4) for NR
83	FY1IN3	I	Y1 Signal (bit3) for NR
84	FY1IN2	I	Y1 Signal (bit2) for NR
85	FY1IN1	I	Y1 Signal (bit1) for NR
86	FY1IN0	I	Y1 Signal (bit0) for NR
87	Y2OUT0	O	NR Section Y2 Signal (bit0)
88	Y2OUT1	O	NR Section Y2 Signal (bit1)
89	Y2OUT2	O	NR Section Y2 Signal (bit2)
90	Y2OUT3	O	NR Section Y2 Signal (bit3)
91	Y2OUT4	O	NR Section Y2 Signal (bit4)
92	Y2OUT5	O	NR Section Y2 Signal (bit5)
93	Y2OUT6	O	NR Section Y2 Signal (bit6)
94	Y2OUT7	O	NR Section Y2 Signal (bit7)
95	VSS	—	GND
96	VDD	—	Voltage
97	FCOUT0	O	NR Section C Signal (bit0)
98	FCOUT1	O	NR Section C Signal (bit1)
99	FCOUT2	O	NR Section C Signal (bit2)
100	FCOUT3	O	NR Section C Signal (bit3)

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
101	ZFCIN0	I	C Signal (bit0) for Zoom
102	ZFCIN1	I	C Signal (bit1) for Zoom
103	ZFCIN2	I	C Signal (bit2) for Zoom
104	ZFCIN3	I	C Signal (bit3) for Zoom
105	FC2IN0	I	C Signal (bit0) for NR
106	FC2IN1	I	C Signal (bit1) for NR
107	FC2IN2	I	C Signal (bit2) for NR
108	FC2IN3	I	C Signal (bit3) for NR
109	ZFY2IN7	I	Y2 Signal (bit7) for V Zoom
110	ZFY2IN6	I	Y2 Signal (bit6) for V Zoom
111	ZFY2IN5	I	Y2 Signal (bit5) for V Zoom
112	ZFY2IN4	I	Y2 Signal (bit4) for V Zoom
113	VSS	—	GND
114	VDD	—	Voltage
115	ZFY2IN3	I	Y2 Signal (bit3) for V Zoom
116	ZFY2IN2	I	Y2 Signal (bit2) for V Zoom
117	ZFY2IN1	I	Y2 Signal (bit1) for V Zoom
118	ZFY2IN0	I	Y2 Signal (bit0) for V Zoom
119	FY2IN7	I	Y2 Signal (bit7) for NR
120	FY2IN6	I	Y2 Signal (bit6) for NR
121	FY2IN5	I	Y2 Signal (bit5) for NR
122	FY2IN4	I	Y2 Signal (bit4) for NR
123	FY2IN3	I	Y2 Signal (bit3) for NR
124	FY2IN2	I	Y2 Signal (bit2) for NR
125	FY2IN1	I	Y2 Signal (bit1) for NR
126	FY2IN0	I	Y2 Signal (bit0) for NR
127	FCK	I	fck Rate Clock (22.5MHz)
128	FCK2	I	2fck Rate Clock (22.5MHz)
129	MIAD7	I/O	Microcomputer Data (bit7)
130	VDD	—	Voltage
131	VSS	—	GND
132	MIAD6	I/O	Microcomputer Data (bit6)
133	MIAD5	I/O	Microcomputer Data (bit5)
134	MIAD4	I/O	Microcomputer Data (bit4)
135	MIAD3	I/O	Microcomputer Data (bit3)
136	MIAD2	I/O	Microcomputer Data (bit2)
137	MIAD1	I/O	Microcomputer Data (bit1)
138	MIAD0	I/O	Microcomputer Data (bit0)
139	ALE	I	ALE Signal
140	CS	I	CS Signal
141	RE	I	RE Signal
142	WE	I	WE Signal
143	RIN0	I	Rch Digital Signal (bit0)
144	RIN1	I	Rch Digital Signal (bit1)
145	RIN2	I	Rch Digital Signal (bit2)
146	RIN3	I	Rch Digital Signal (bit3)
147	RIN4	I	Rch Digital Signal (bit4)
148	RIN5	I	Rch Digital Signal (bit5)
149	RIN6	I	Rch Digital Signal (bit6)
150	RIN7	I	Rch Digital Signal (bit7)
151	RIN8	I	Rch Digital Signal (bit8)
152	VDD	—	Voltage
153	VSS	—	GND
154	BVSS	—	A/D Analogue GND for Internal Bch
155	ABIN	I	Bch Analogue Signal
156	BVDD	—	A/D Analogue Voltage for Internal Bch
157	RTOP	I	Internal A/D Reference Voltage (Top)
158	RVSS	—	A/D Analogue GND for Internal Rch
159	ARIN	I	Rch Analogue Signal
160	RVDD	—	A/D Analogue Voltage for Internal Rch
161	RBTM	I	Internal A/D Reference Voltage (Bottom)
162	GVSS	—	A/D Analogue GND for Internal Gch
163	AGIN	I	Gch Analogue Signal
164	GVDD	—	A/D Analogue Voltage for Internal Gch

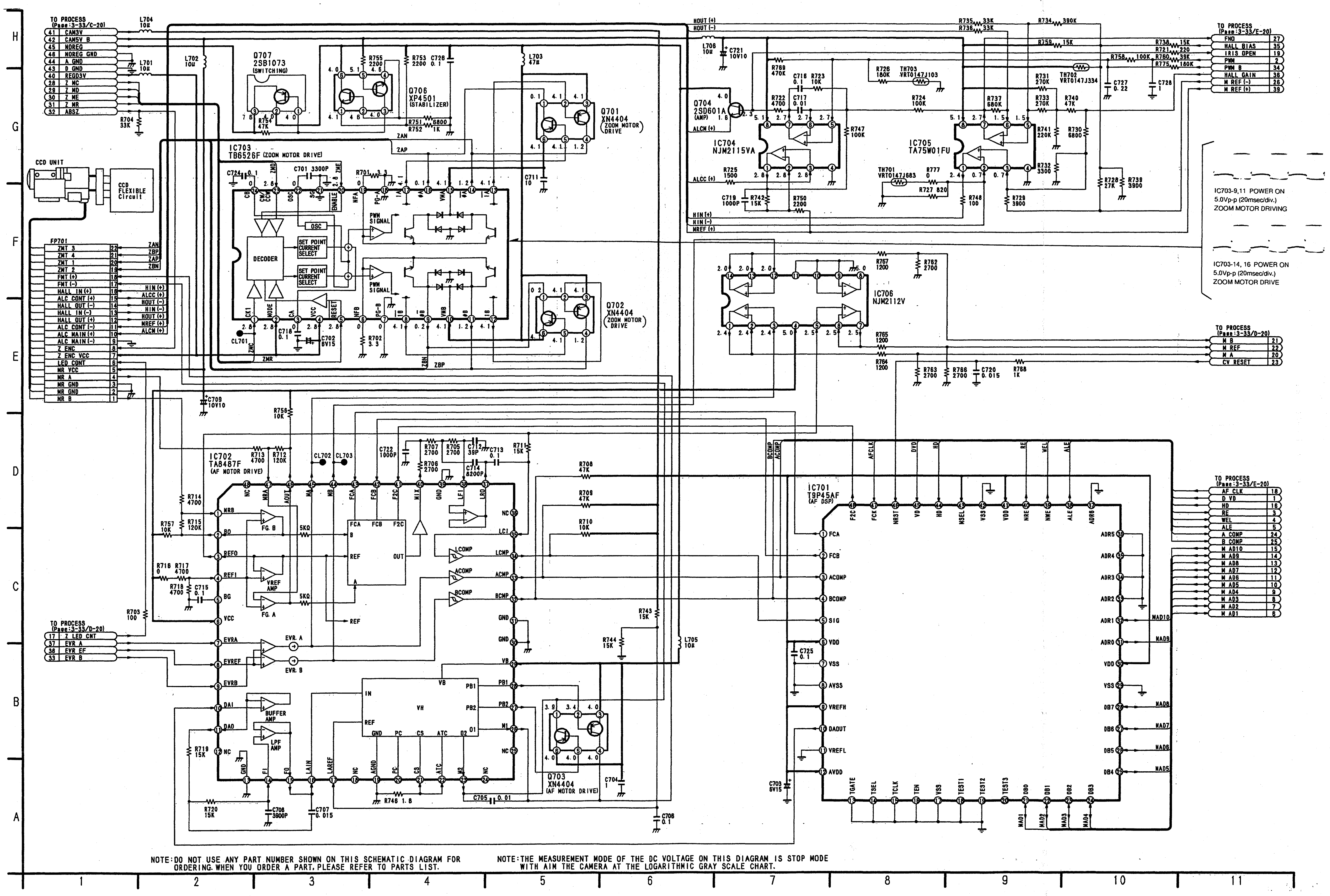
PROCESS IC BLOCK

IC302:MN673432

(SCHEMATIC DIAGRAM:Page 3-31/C-9)



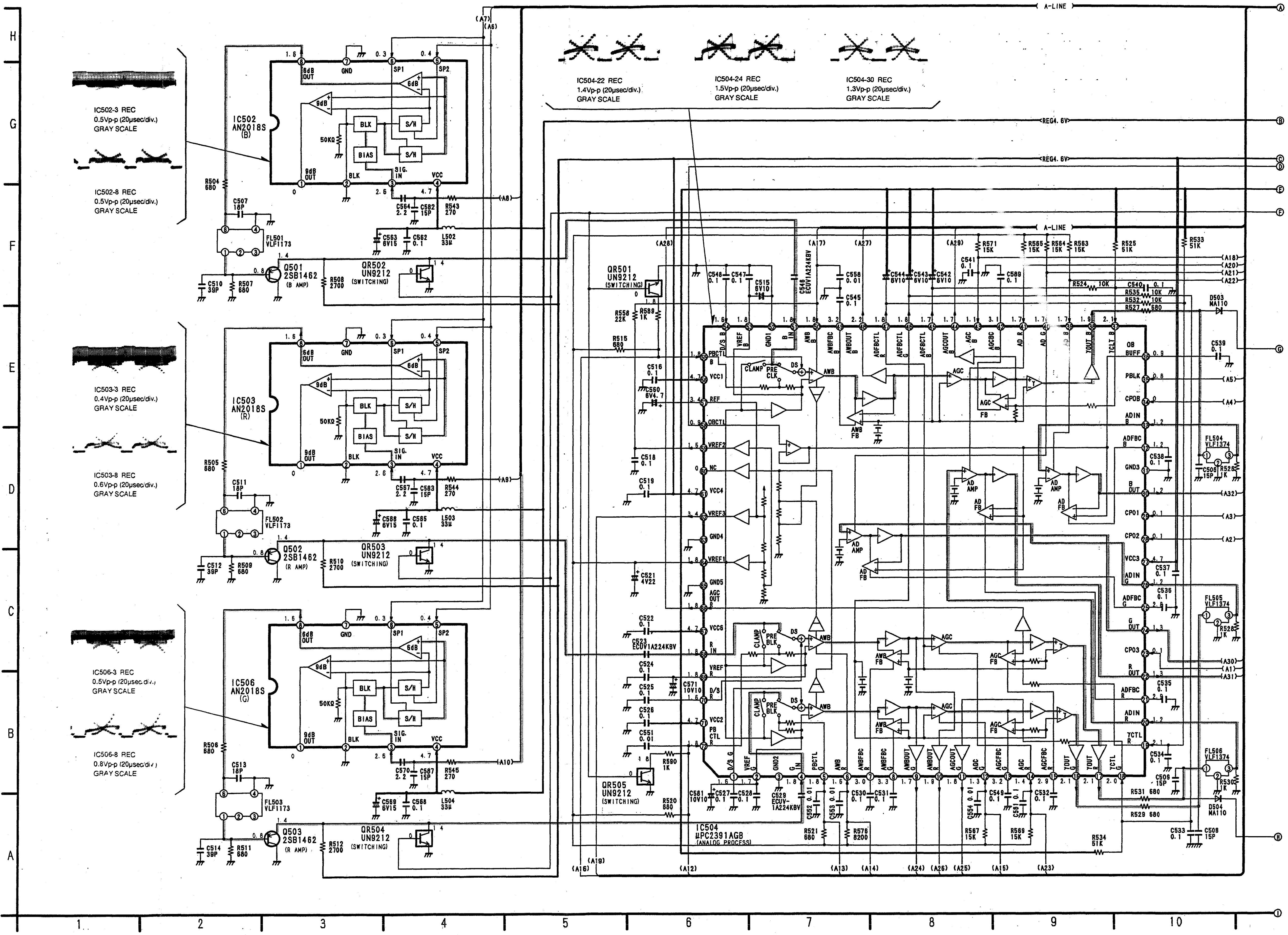
3-12. LENS DRIVE SCHEMATIC DIAGRAM


TO PROCESS (Page:3-33/C-20)
CAM3V
CAM5V B
NOREG
NOREG GND
A GND
D GND
REGD3V
Z MC
Z MD
Z ME
Z MR
ABSZ
L704 10µ
L701 10µ
L702 10µ
R704 33K
Q707 2SB1073 (SWITCHING)
R755 2200
R753 2200
C726 0.1
Q706 XP4501 (STABILIZER)
R754 47K
R751 6800
R752 1K
L703 47µ
Q701 XN4404 (ZOOM MOTOR DRIVE)
Q702 XN4404 (ZOOM MOTOR DRIVE)
IC703 TB6526F (ZOOM MOTOR DRIVE)
DECODER
OSC
SET POINT CURRENT SELECT
PWM SIGNAL
C701 3300P
C711 10
C718 0.1
C702 6V15
R702 3.3
CL701
CCD UNIT
CCD FLEXIBLE Circuit
FP701
ZMT 3
ZMT 4
ZMT 1
ZMT 2
FMT (+)
FMT (-)
HALL IN (+)
ALC CONT (+)
HALL OUT (-)
HALL IN (-)
HALL OUT (+)
ALC CONT (-)
ALC MAIN (+)
ALC MAIN (-)
Z ENC
Z ENC VCC
LED CONT
MR VCC
MR A
MR GND
MR GND
MR B
HOUT (+)
HOUT (-)
L706 10µ
C721 10V10
Q704 2SD601A (AMP)
IC704 NJM2115VA
IC705 TA75W01FU
R735 33K
R736 33K
R734 390K
R759 15K
R738 15K
R721 220
R760 39K
R758 100K
R775 180K
TH703 VRT0147J103
TH702 VRT0147J334
TH701 VRT0147J683
R727 820
R747 100K
R741 220K
R730 6800
R732 3300
R728 27K
R739 3900
R748 100
R729 3900
ALCM (+)
ALCC (+)
HIN (+)
HIN (-)
NREF (+)
C719 1000P
R742 15K
R750 2200
TO PROCESS (Page:3-33/E-20)
FNO
HALL BIAS
IRIS OPEN
PWM
PWM B
HALL GAIN
M REF (-)
M REF (+)
IC703-9,11 POWER ON
5.0Vp-p (20msec/div.)
ZOOM MOTOR DRIVING
IC703-14, 16 POWER ON
5.0Vp-p (20msec/div.)
ZOOM MOTOR DRIVE
IC706 NJM2112V
R767 1200
R762 2700
R765 1200
R764 1200
R763 2700
R766 2700
C720 0.015
R768 1K
TO PROCESS (Page:3-33/D-20)
M B
M REF
M A
CV RESET
C709 10V10
R756 10K
IC702 TA8487F (AF MOTOR DRIVE)
R713 4700
R712 120K
CL702
CL703
C722 1000P
R707 2700
R705 2700
C712 39P
C713 0.1
R706 2700
C714 8200P
R711 15K
R708 47K
R709 47K
R710 10K
R714 4700
R757 10K
R715 120K
R716 0
R717 4700
R718 4700
C715 0.1
R703 100
FG B
FG A
VREF AMP
BUFFER AMP
LPF AMP
LCOMP
ACOMP
BCOMP
EVR A
EVR B
VH
R743 15K
R744 15K
L705 10µ
Q703 XN4404 (AF MOTOR DRIVE)
C704 1
C705 0.01
C706 0.1
R719 15K
R720 15K
C708 3900P
C707 0.015
R746 1.8
TO PROCESS (Page:3-33/D-20)
Z LED CNT
EVR A
EVR EF
EVR B
IC701 T9P45AF (AF DSP)
C725 0.1
C703 6V15
TO PROCESS (Page:3-33/E-20)
AF CLK
D VD
HD
RE
WEL
ALE
A COMP
B COMP
M AD10
M AD9
M AD8
M AD7
M AD6
M AD5
M AD4
M AD3
M AD2
M AD1
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

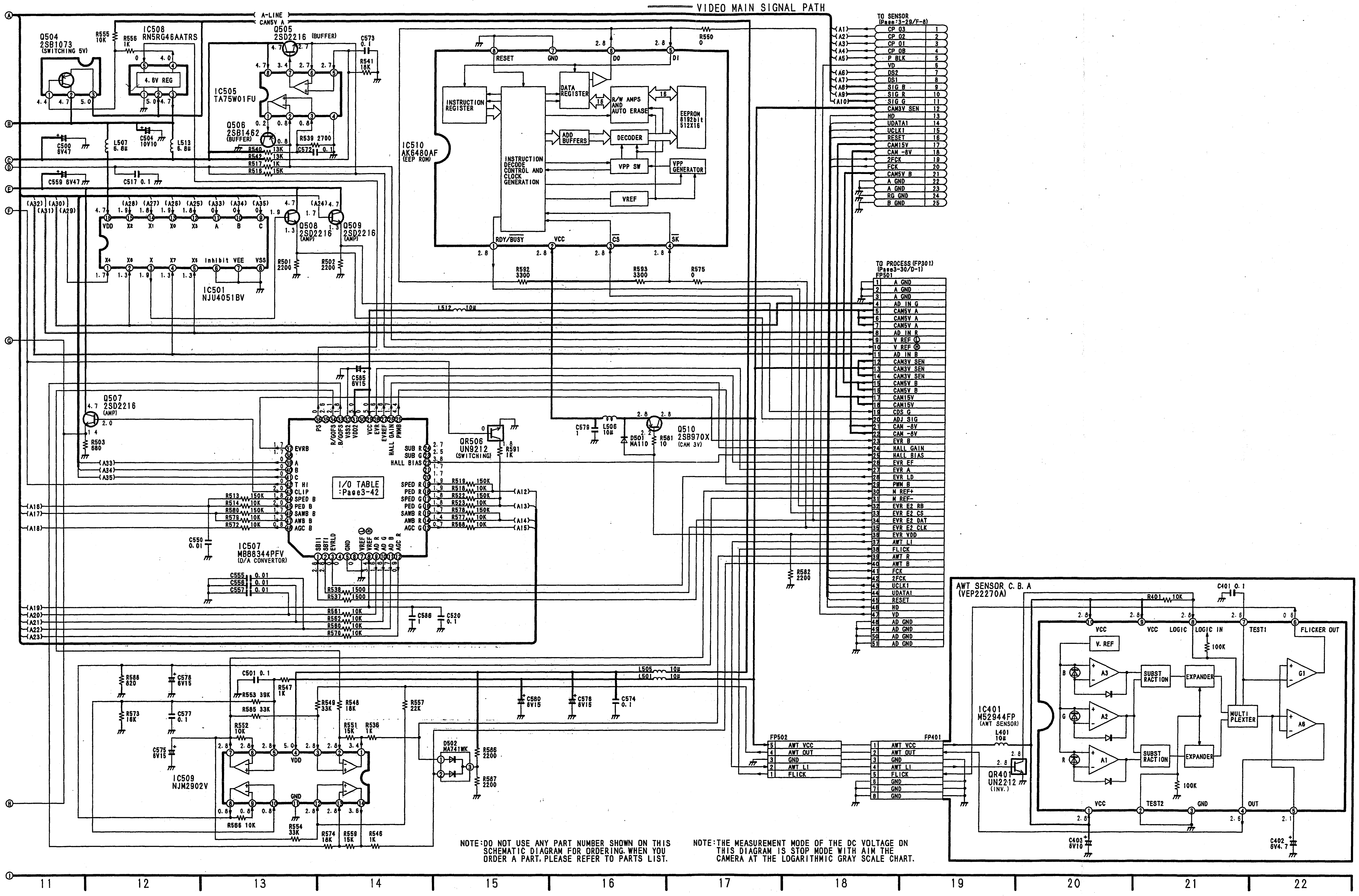
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

3-13. ANALOG PRE PROCESS & AWT SENSOR SCHEMATIC DIAGRAM



IC502-3 REC
0.5Vp-p (20µsec/div.)
GRAY SCALE
IC502-8 REC
0.5Vp-p (20µsec/div.)
GRAY SCALE
IC503-3 REC
0.4Vp-p (20µsec/div.)
GRAY SCALE
IC503-8 REC
0.6Vp-p (20µsec/div.)
GRAY SCALE
IC506-3 REC
0.5Vp-p (20µsec/div.)
GRAY SCALE
IC506-8 REC
0.8Vp-p (20µsec/div.)
GRAY SCALE
IC504-22 REC
1.4Vp-p (20µsec/div.)
GRAY SCALE
IC504-24 REC
1.5Vp-p (20µsec/div.)
GRAY SCALE
IC504-30 REC
1.3Vp-p (20µsec/div.)
GRAY SCALE
IC502
AN2018S
(B)
IC503
AN2018S
(R)
IC506
AN2018S
(G)
Q501
2SB1462
(B AMP)
Q502
2SB1462
(R AMP)
Q503
2SB1462
(R AMP)
QR502
UN9212
(SWITCHING)
QR503
UN9212
(SWITCHING)
QR504
UN9212
(SWITCHING)
QR501
UN9212
(SWITCHING)
QR505
UN9212
(SWITCHING)
FL501
VLF1173
FL502
VLF1173
FL503
VLF1173
FL504
VLF1374
FL505
VLF1374
FL506
VLF1374
D503
MA110
D504
MA110
IC504
µPC2391AGB
(ANALOG PROCESS)
A-LINE
REG4.6V
BLK
S/H
BIAS
SIG. IN
VCC
GND
SP1
SP2
6dB OUT
9dB OUT
50KΩ
CLAMP
PRE BLK
DS
AWB
AGC
AD AMP
AD FB
AGC FB
AWB FB
OB BUFF
PBLK
CPOB
ADIN
ADFBC
GND3
B OUT
CPO1
CPO2
VCC3
G OUT
CPO3
R OUT
7CTL
VCC1
REF
OBCTL
VREF2
NC
VCC4
VREF3
GND4
VREF1
GND5
AGC OUT
VCC6
R IN
VREF
D/S
VCC2
PB CTL
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10


VIDEO MAIN SIGNAL PATH
A-LINE
CAM5V A
Q504 2SB1073 (SWITCHING 5V)
IC508 RN5RG46AATRS
4.6V REG
Q505 2SD2216 (BUFFER)
IC505 TA75W01FU
Q506 2SB1462 (BUFFER)
IC510 AK6480AF (EEP ROM)
RESET
GND
DO
DI
INSTRUCTION REGISTER
INSTRUCTION DECODE CONTROL AND CLOCK GENERATION
DATA REGISTER
R/W AMPS AND AUTO ERASE
EEPROM 8192bit 512X16
ADD BUFFERS
DECODER
VPP SW
VPP GENERATOR
VREF
RDY/BUSY
VCC
CS
SK
IC501 NJU4051BV
Q508 2SD2216 (AMP)
Q509 2SD2216 (AMP)
Q507 2SD2216 (AMP)
IC507 MB88344PFV (D/A CONVERTOR)
I/O TABLE :Page3-42
QR506 UN9212 (SWITCHING)
Q510 2SB970X (CAM 3V)
D501 MA110
IC509 NJM2902V
D502 MA741WK
TO SENSOR (Page3-29/F-8)
CP 03
CP 02
CP 01
CP 0B
P BLK
VD
DS2
DS1
SIG B
SIG R
SIG G
CAM3V SEN
HD
UDATA1
UCLK1
RESET
CAM15V
CAM -8V
2FCK
FCK
CAM5V B
A GND
A GND
RG GND
B GND
TO PROCESS (FP301) (Page3-30/D-1)
FP501
A GND
A GND
A GND
AD IN G
CAM5V A
CAM5V A
CAM5V A
AD IN R
V REF ①
V REF ②
AD IN B
CAM3V SEN
CAM3V SEN
CAM3V SEN
CAM5V B
CAM5V B
CAM15V
CAM15V
CDS G
ADJ SIG
CAM -8V
CAM -8V
EVR B
HALL GAIN
HALL BIAS
EVR EF
EVR A
EVR LD
PWM B
M REF+
M REF-
EVR E2 RB
EVR E2 CS
EVR E2 DAT
EVR E2 CLK
EVR VDD
AWT LI
FLICK
AWT R
AWT B
FCK
2FCK
UCLK1
UDATA1
RESET
HD
VD
AD GND
AD GND
AD GND
AD GND
FP502
AWT VCC
AWT OUT
GND
AWT LI
FLICK
FP401
AWT SENSOR C.B.A (VEP22270A)
IC401 M52944FP (AWT SENSOR)
QR401 UN2212 (INV.)
V. REF
SUBST RACTION
EXPANDER
MULTI PLEXTER
LOGIC IN
TEST1
TEST2
FLICKER OUT
OUT
11
12
13
14
15
16
17
18
19
20
21
22

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

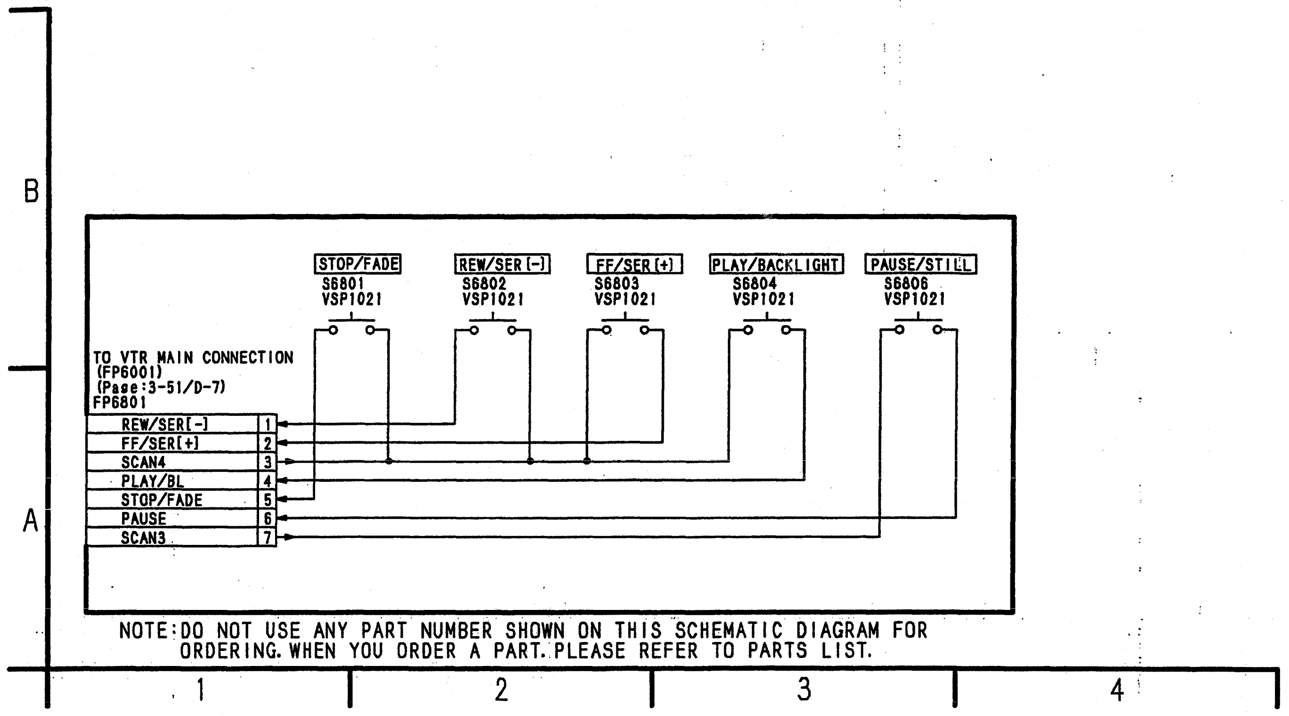
ANALOG PRE PROCESS I/O TABLE

IC507 (MB88344PFV): D/A CONVERTER

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	SBI1	I	Serial Data (Data Length Input Serial Data of 14 bits)
2	SBT1	I	Shift Clock (With Build Up of Shift Clock, Input Signal from DI Terminal is Input into 14 bits Shift Resistor)
3	EVRLD	I	When High Level is Input intor LD Terminal, Value of Shift Resistor is Loaded by Decoder and Resistor for D/A Output.
4	DO	—	(N.C.)
5	GND	—	MCU Interface, GND Terminal of OP AMP
6	NC	—	(N.C.)
7	VREF Ⓛ	—	D/A Converter GND
8	VREF Ⓗ	—	D/A Converter Voltage
9	AD R	O	8 bits D/A Output Terminal with OP AMP (Reference Voltage: VDD1 · VSS1)
10	AD G		
11	AD B		
12	AGC R		
13	AGC G		
14	AWB R		
15	SAWB R		
16	PED G		
17	SPED G		
18	PED R		
19	SPED R		
20	NC	—	(N.C.)
21	NC	—	(N.C.)
22	HALL BIAS	O	8 bits D/A Output Terminal with OP AMP (Reference Voltage: VDD2 · VSS2)
23	SUB G	—	(N.C.)
24	SUB R	—	(N.C.)
25	PWMB	O	8 bits D/A Output Terminal with OP AMP (Reference Voltage: VDD2 · VSS2)
26	HALL GAIN		
27	EVREF		
28	EVR		
29	VCC	—	MCU Interface, Voltage Terminal of OP AMP
30	NC	—	(N.C.)
31	VDD2	—	D/A Converter Voltage
32	VSS2	—	D/A Converter GND
33	B/G OFS	O	8 bits D/A Output Terminal with OP AMP (Reference Voltage: VDD2 · VSS2)
34	R/G OFS		
35	NC	—	(N.C.)
36	PS	O	8 bits D/A Output Terminal with OP AMP (Reference Voltage: VDD2 · VSS2)
37	EVRB		
38	NC	—	(N.C.)
39	A	O	8 bits D/A Output Terminal with OP AMP (Reference Voltage: VDD1 · VSS1)
40	B		
41	C		
42	TH1		
43	CLIP		
44	SPED B		
45	PED B		
46	SAWB B		
47	AWB B		
48	AGC B		

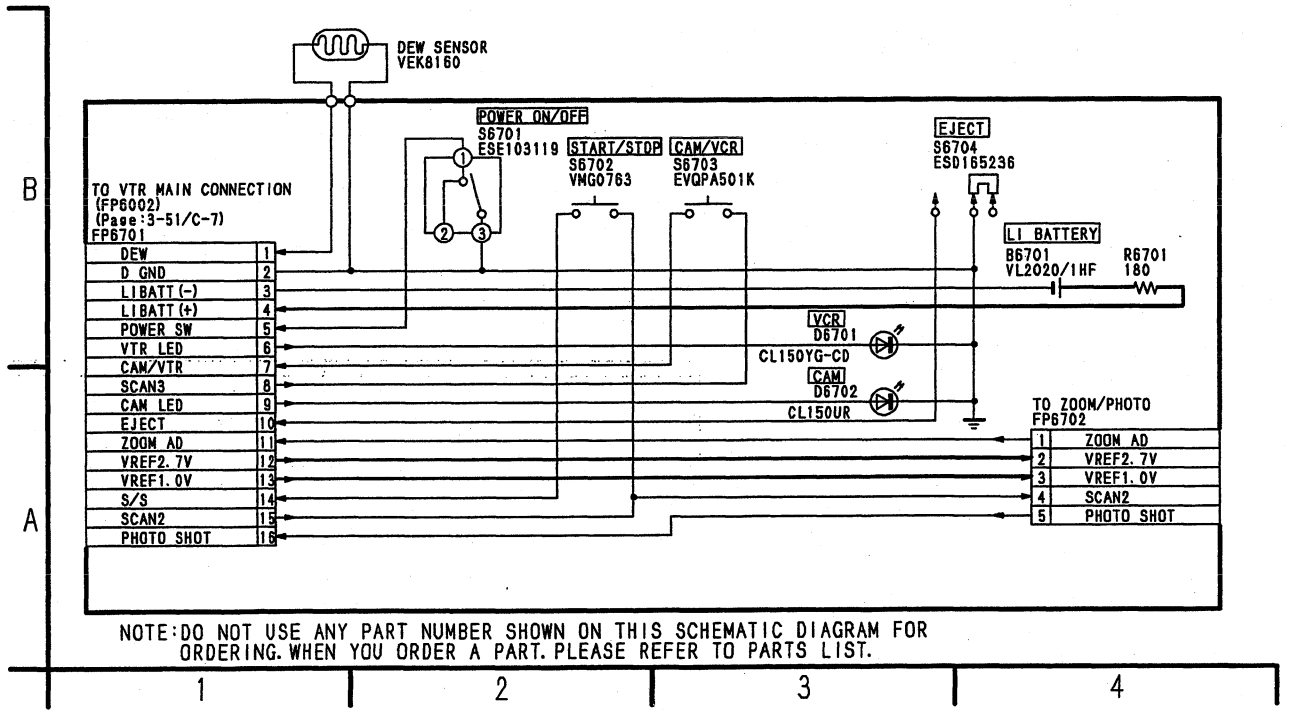
Back Page: ANALOG PRE PROCESS
& AWT SENSOR Section

3-14. TOP OPERATION SCHEMATIC DIAGRAM


B
A
STOP/FADE
S6801
VSP1021
REW/SER [-]
S6802
VSP1021
FF/SER [+]
S6803
VSP1021
PLAY/BACKLIGHT
S6804
VSP1021
PAUSE/STILL
S6806
VSP1021
TO VTR MAIN CONNECTION
(FP6001)
(Page:3-51/D-7)
FP6801
REW/SER[-] 1
FF/SER[+] 2
SCAN4 3
PLAY/BL 4
STOP/FADE 5
PAUSE 6
SCAN3 7
1
2
3
4

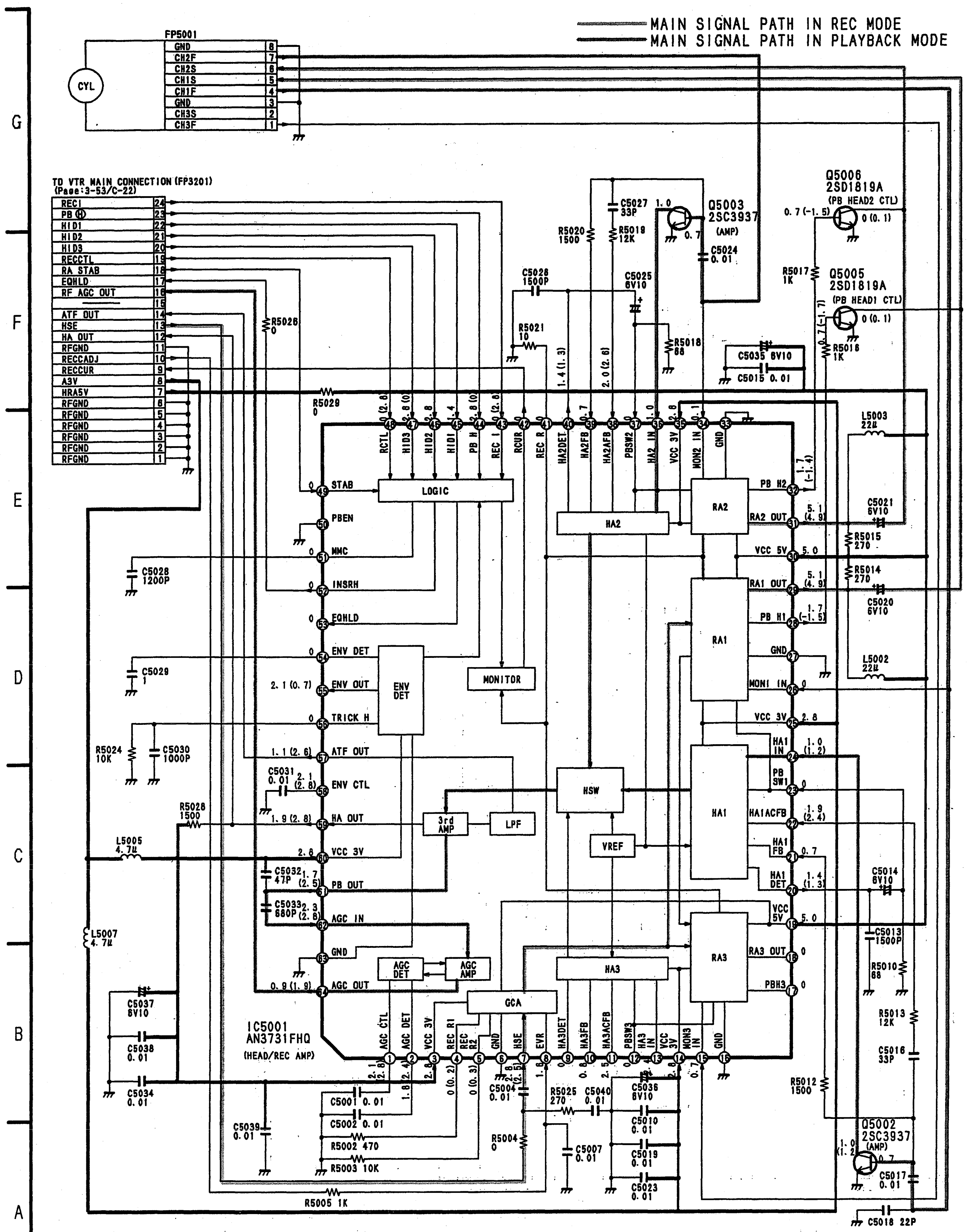
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART. PLEASE REFER TO PARTS LIST.

3-15. REAR OPERATION SCHEMATIC DIAGRAM


B
A
DEW SENSOR
VEK8160
POWER ON/OFF
S6701
ESE103119
START/STOP
S6702
VMG0763
CAM/VCR
S6703
EVQPA501K
EJECT
S6704
ESD165236
LI BATTERY
B6701
VL2020/1HF
R6701
180
VCR
D6701
CL150YG-CD
CAM
D6702
CL150UR
TO VTR MAIN CONNECTION
(FP6002)
(Page:3-51/C-7)
FP6701
DEW 1
D GND 2
LIBATT (-) 3
LIBATT (+) 4
POWER SW 5
VTR LED 6
CAM/VTR 7
SCAN3 8
CAM LED 9
EJECT 10
ZOOM AD 11
VREF2.7V 12
VREF1.0V 13
S/S 14
SCAN2 15
PHOTO SHOT 16
TO ZOOM/PHOTO
FP6702
1 ZOOM AD
2 VREF2.7V
3 VREF1.0V
4 SCAN2
5 PHOTO SHOT
1
2
3
4

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART. PLEASE REFER TO PARTS LIST.

3-16. HEAD AMP SCHEMATIC DIAGRAM

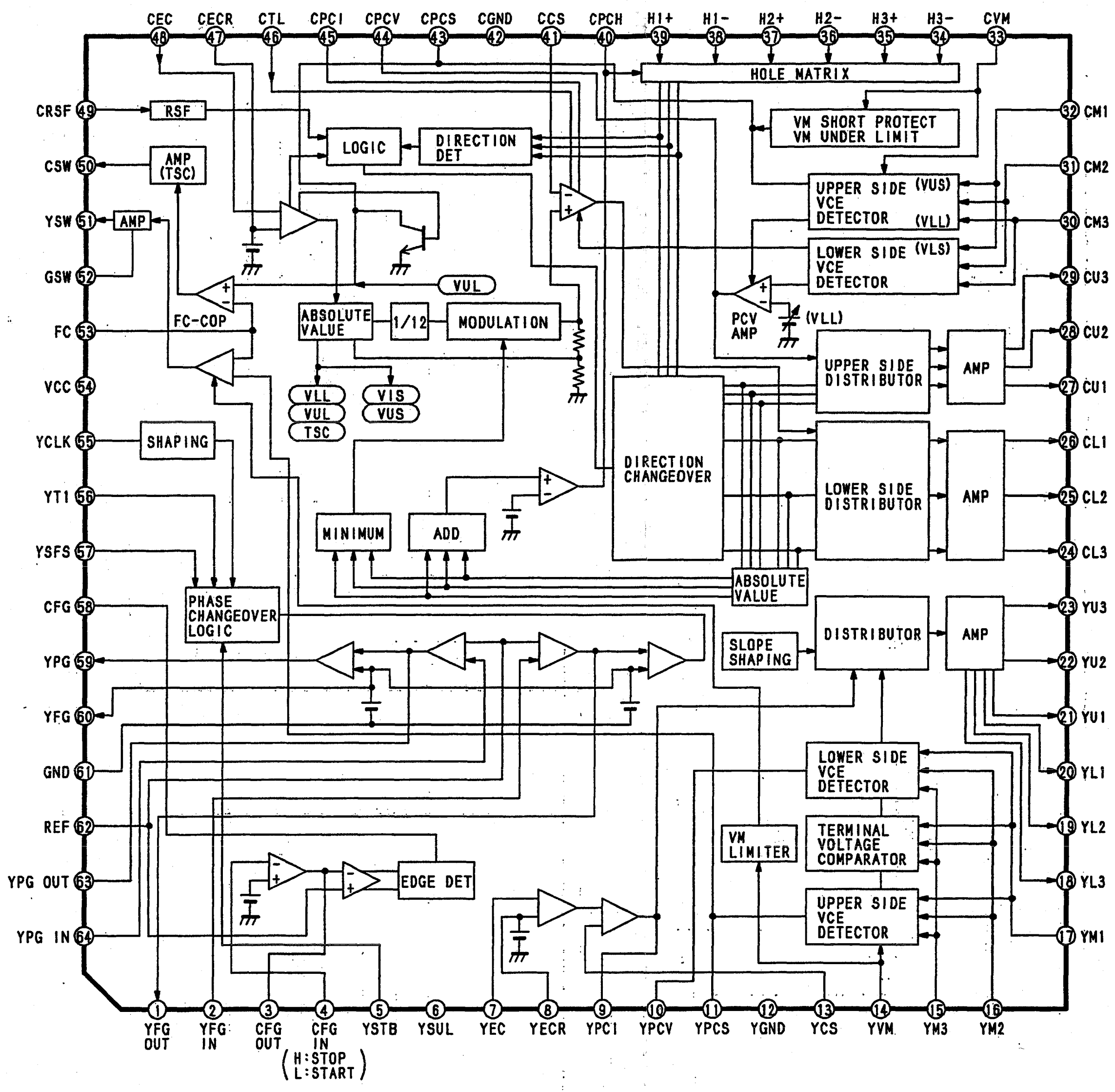

MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
FP5001
CYL
GND 8
CH2F 7
CH2S 6
CH1S 5
CH1F 4
GND 3
CH3S 2
CH3F 1
TO VTR MAIN CONNECTION (FP3201)
(Page:3-53/C-22)
REC1 24
PB H 23
HID1 22
HID2 21
HID3 20
RECCTL 19
RA STAB 18
EQHLD 17
RF AGC OUT 16
15
ATF OUT 14
HSE 13
HA OUT 12
RFGND 11
RECCADJ 10
RECCUR 9
A3V 8
HRA5V 7
RFGND 6
RFGND 5
RFGND 4
RFGND 3
RFGND 2
RFGND 1
Q5003
2SC3937
(AMP)
Q5006
2SD1819A
(PB HEAD2 CTL)
Q5005
2SD1819A
(PB HEAD1 CTL)
Q5002
2SC3937
(AMP)
IC5001
AN3731FHQ
(HEAD/REC AMP)
LOGIC
HA2
RA2
RA1
ENV DET
MONITOR
HSW
VREF
HA1
3rd AMP
LPF
AGC DET
AGC AMP
GCA
HA3
RA3
STAB
PBEN
MMC
INSRH
EQHLD
ENV DET
ENV OUT
TRICK H
ATF OUT
ENV CTL
HA OUT
VCC 3V
PB OUT
AGC IN
GND
AGC OUT
RCTL
HID3
HID2
HID1
PB H
REC I
RCUR
REC R
HA2DET
HA2FB
HA2AFB
PBSW2
HA2 IN
VCC 3V
MON2 IN
GND
PB H2
RA2 OUT
VCC 5V
RA1 OUT
PB H1
GND
MON1 IN
VCC 3V
HA1 IN
PB SW1
HA1ACFB
HA1 FB
HA1 DET
VCC 5V
RA3 OUT
PBH3
AGC CTL
AGC DET
VCC 3V
REC R1
REC R2
GND
HSE
EVR
HA3DET
HA3FB
HA3ACFB
PBSW3
HA3 IN
VCC 3V
MON3 IN
GND
L5003 22µ
L5002 22µ
L5005 4.7µ
L5007 4.7µ
R5005 1K
R5003 10K
R5002 470
C5018 22P
G
F
E
D
C
B
A
1
2
3
4
5

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

DRIVE IC BLOCK

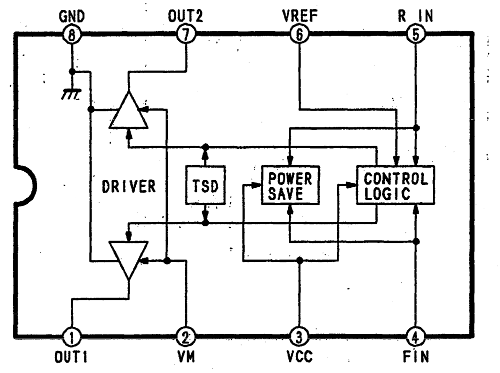
IC2201:TB6519FA

(SCHEMATIC DIAGRAM:Page 3-47/E-7)

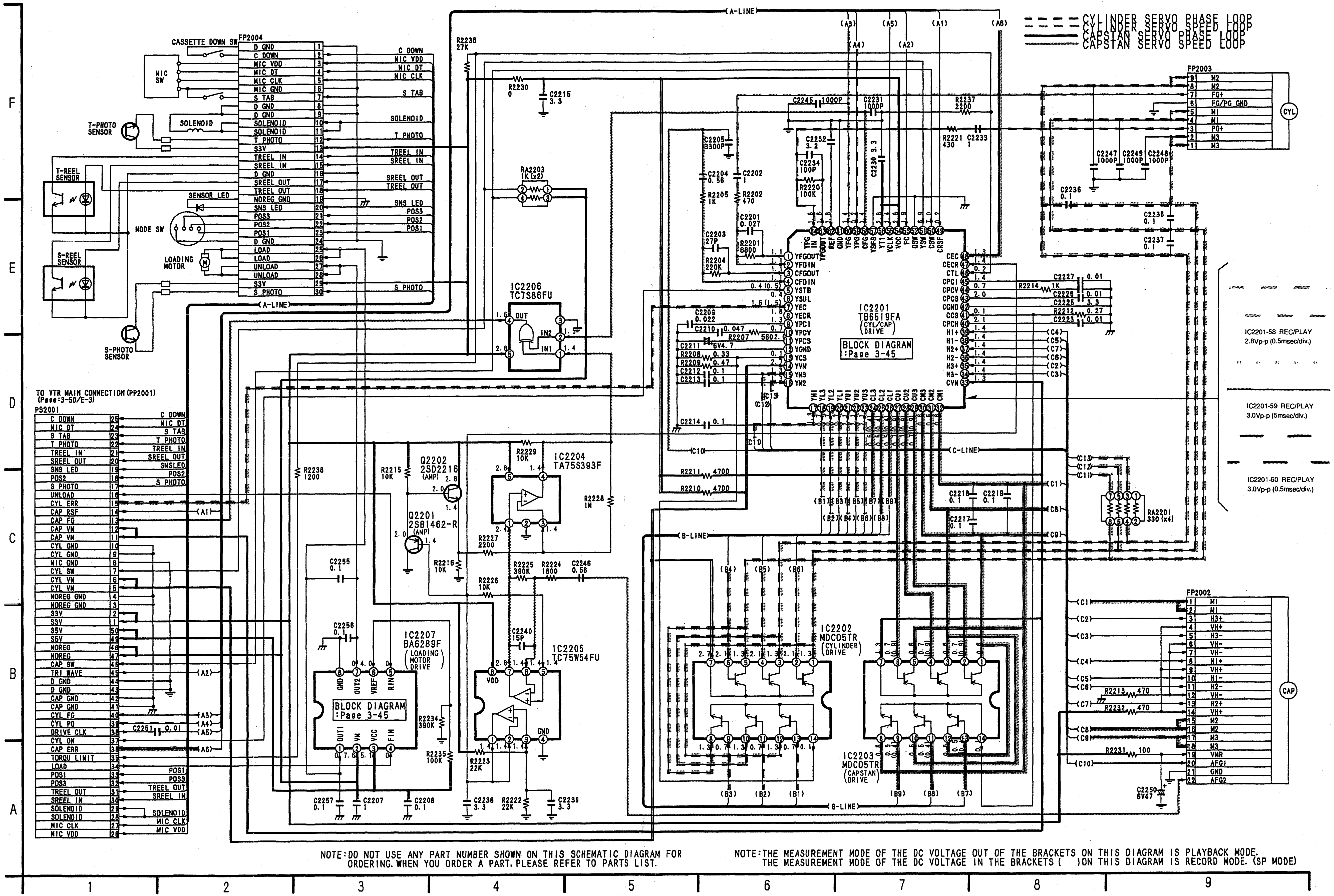

CEC 48
CECR 47
CTL 46
CPCI 45
CPCV 44
CPCS 43
CGND 42
CCS 41
CPCH 40
H1+ 39
H1- 38
H2+ 37
H2- 36
H3+ 35
H3- 34
CVM 33
CRSF 49
CSW 50
YSW 51
GSW 52
FC 53
VCC 54
YCLK 55
YT1 56
YSFS 57
CFG 58
YPG 59
YFG 60
GND 61
REF 62
YPG OUT 63
YPG IN 64
CM1 32
CM2 31
CM3 30
CU3 29
CU2 28
CU1 27
CL1 26
CL2 25
CL3 24
YU3 23
YU2 22
YU1 21
YL1 20
YL2 19
YL3 18
YM1 17
YFG OUT 1
YFG IN 2
CFG OUT 3
CFG IN 4
YSTB 5
YSUL 6
YEC 7
YECR 8
YPC1 9
YPCV 10
YPCS 11
YGND 12
YCS 13
YVM 14
YM3 15
YM2 16
(H:STOP L:START)
HOLE MATRIX
RSF
LOGIC
DIRECTION DET
VM SHORT PROTECT
VM UNDER LIMIT
AMP (TSC)
AMP
UPPER SIDE VCE DETECTOR (VUS) (VLL)
LOWER SIDE VCE DETECTOR (VLS)
VUL
ABSOLUTE VALUE
1/12
MODULATION
FC-COP
PCV AMP
(VLL)
UPPER SIDE DISTRIBUTOR
VLL
VUL
TSC
VIS
VUS
SHAPING
DIRECTION CHANGEOVER
MINIMUM
ADD
LOWER SIDE DISTRIBUTOR
PHASE CHANGEOVER LOGIC
SLOPE SHAPING
DISTRIBUTOR
LOWER SIDE VCE DETECTOR
VM LIMITER
TERMINAL VOLTAGE COMPARATOR
UPPER SIDE VCE DETECTOR
EDGE DET

IC2207:BA6289F

(SCHEMATIC DIAGRAM:Page 3-46/B-3)


GND 8
OUT2 7
VREF 6
R IN 5
DRIVER
TSD
POWER SAVE
CONTROL LOGIC
OUT1 1
VM 2
VCC 3
FIN 4

3-17. DRIVE SCHEMATIC DIAGRAM


CYLINDER SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CAPSTAN SERVO SPEED LOOP
A-LINE
B-LINE
C-LINE
FP2004
FP2003
FP2002
PS2001
TO VTR MAIN CONNECTION (PP2001) (Page: 3-50/E-3)
CASSETTE DOWN SW
MIC SW
T-PHOTO SENSOR
S-PHOTO SENSOR
T-REEL SENSOR
S-REEL SENSOR
SENSOR LED
MODE SW
LOADING MOTOR
SOLENOID
CYL
CAP
IC2201 TB6519FA (CYL/CAP DRIVE)
BLOCK DIAGRAM :Page 3-45
IC2202 MDC05TR (CYLINDER DRIVE)
IC2203 MDC05TR (CAPSTAN DRIVE)
IC2204 TA75S393F
IC2205 TC75W54FU
IC2206 TC7S86FU
IC2207 BA6289F (LOADING MOTOR DRIVE)
BLOCK DIAGRAM :Page 3-45
Q2201 2SB1462-R (AMP)
Q2202 2SD2216 (AMP)
RA2201 330 (x4)
RA2203 1K (x2)
IC2201-58 REC/PLAY 2.8Vp-p (0.5msec/div.)
IC2201-59 REC/PLAY 3.0Vp-p (5msec/div.)
IC2201-60 REC/PLAY 3.0Vp-p (0.5msec/div.)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)

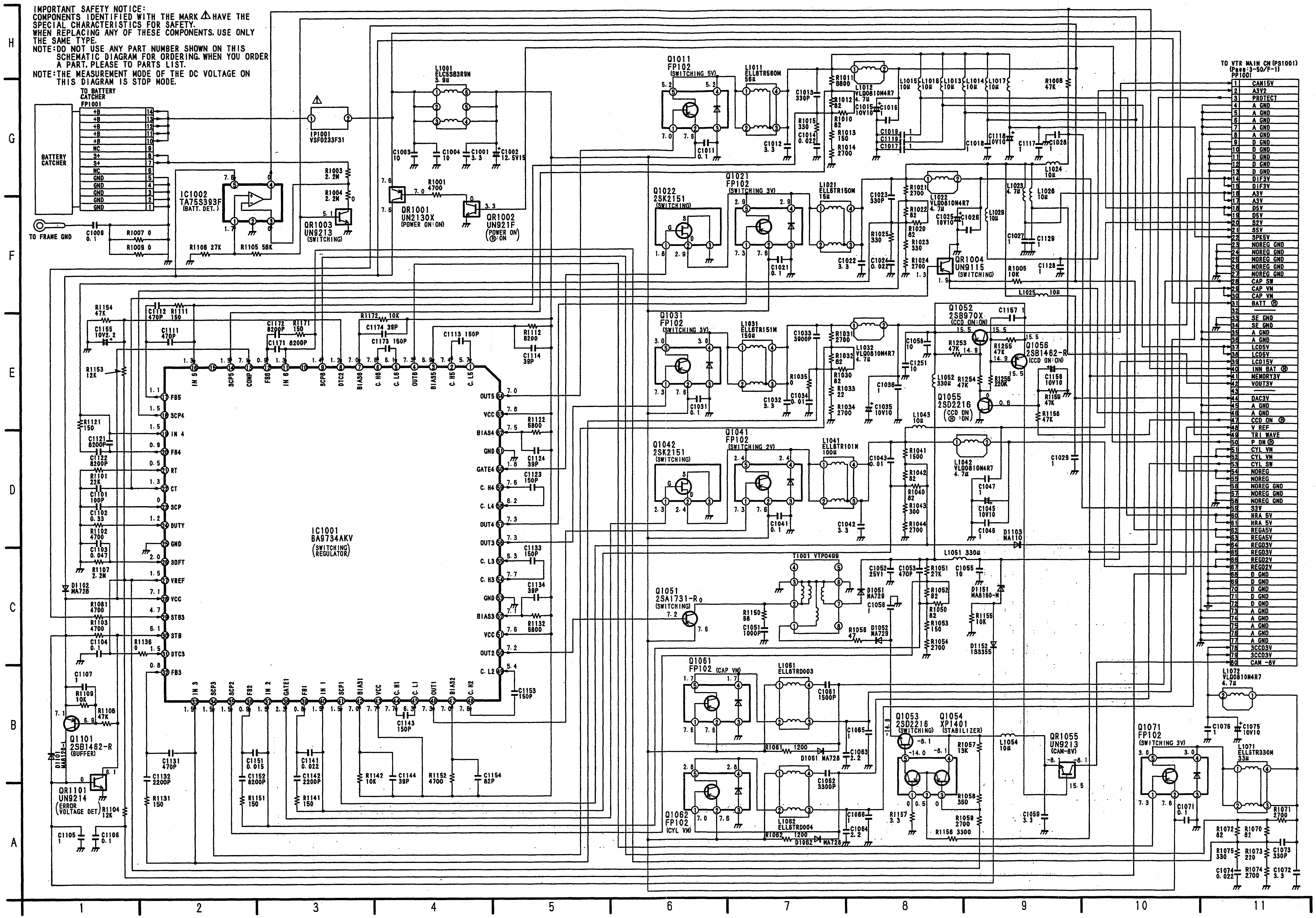
Back Page:
HEAD AMP Section

3-18. POWER SCHEMATIC DIAGRAM

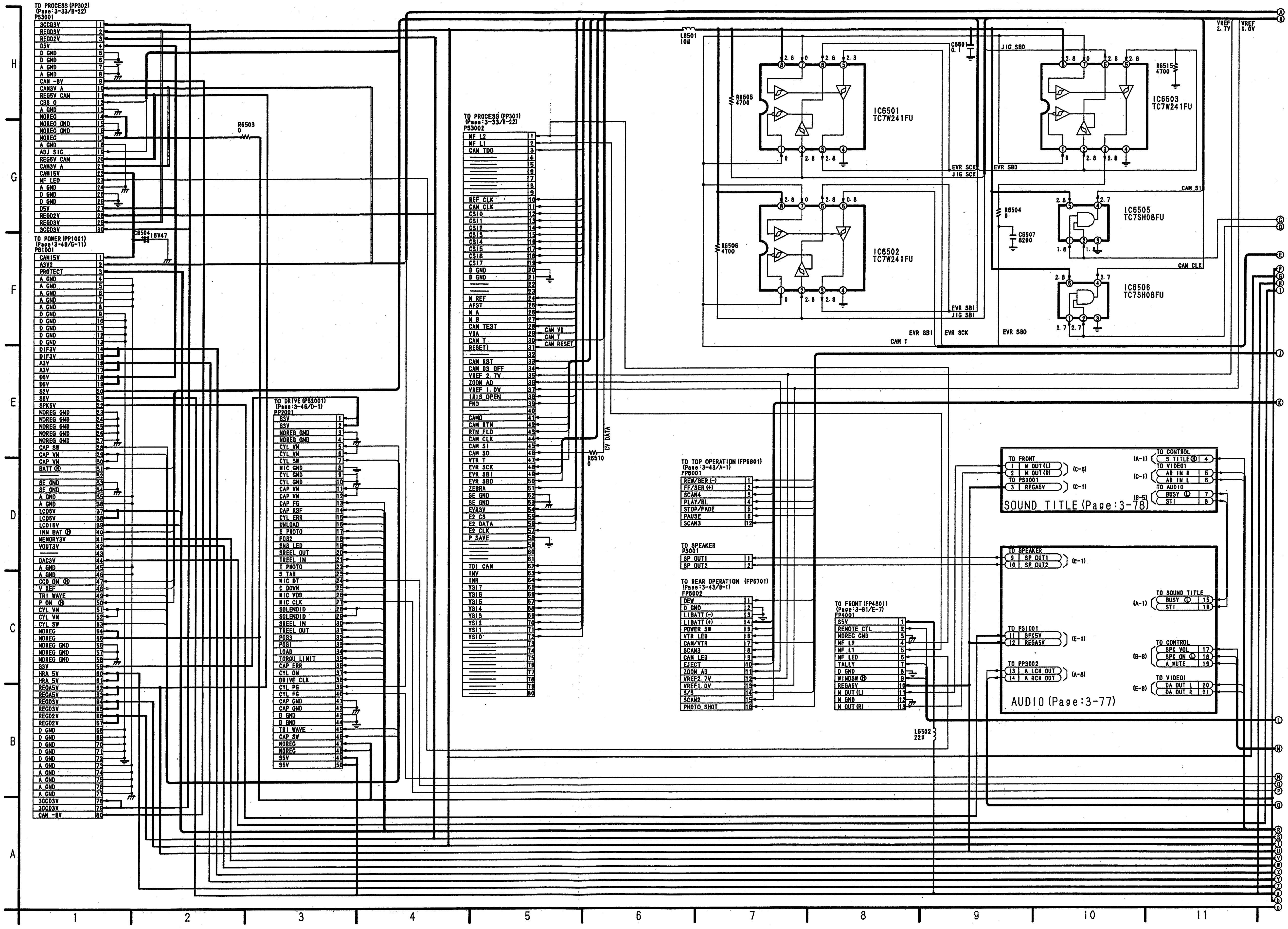
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE TO PARTS LIST.

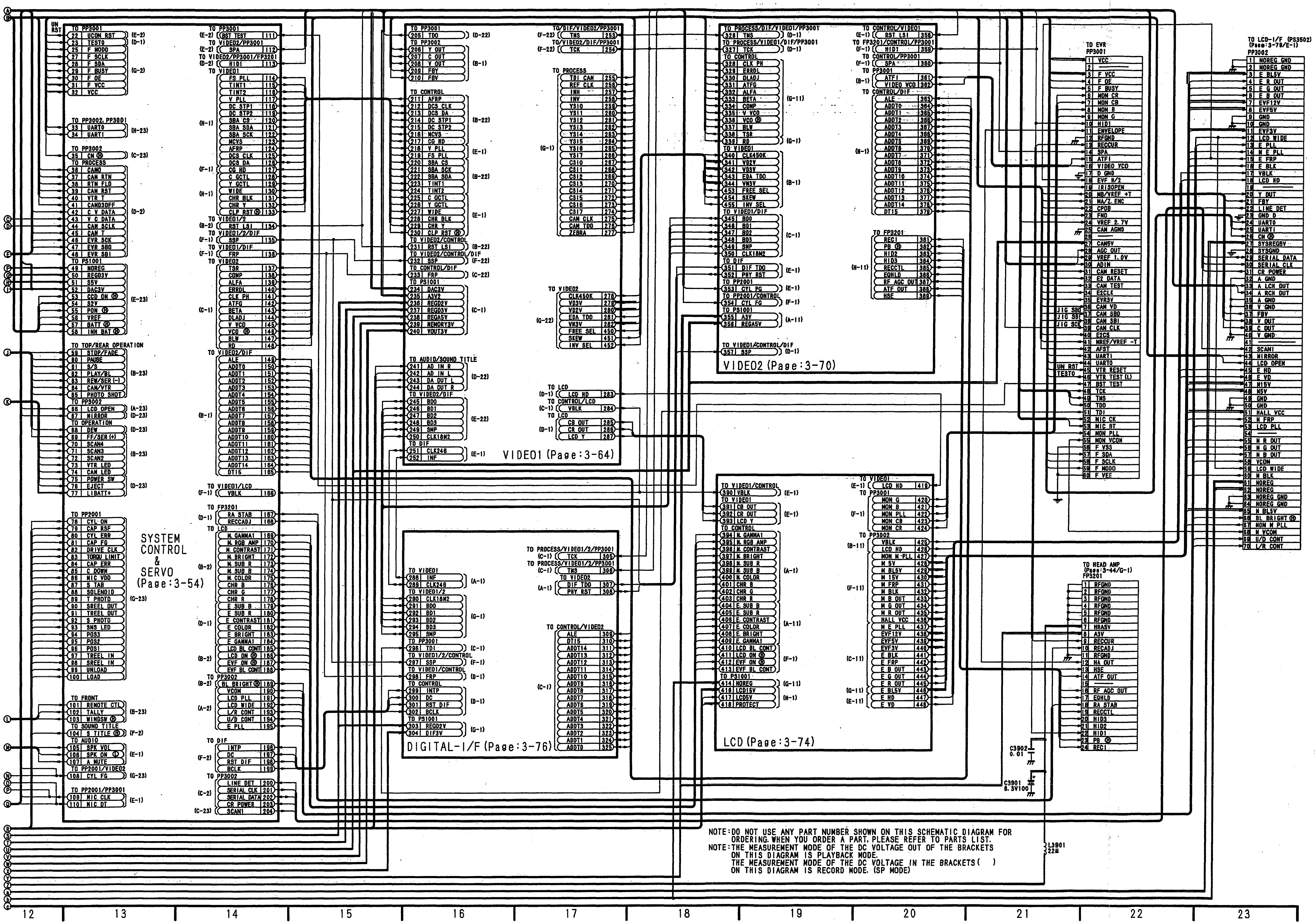
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.


H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
TO BATTERY CATCHER
FP1001
BATTERY CATCHER
+B
NC
S+
GND
TO FRAME GND
C1009 0.1
R1007 0
R1009 0
R1108 27K
R1105 56K
IC1002 TA75S393F (BATT. DET.)
QR1003 UN9213 (SWITCHING)
R1003 2.2M
R1004 2.2M
IP1001 VSF0233F31
L1001 ELC5SB3R9N 3.9µ
C1003 10
C1004 10
C1001 3.3
C1002 12.5V15
R1001 4700
QR1001 UN2130X (POWER ON: ON)
QR1002 UN921F (POWER ON)(Ⓗ:ON)
IC1001 BA9734AKV (SWITCHING REGULATOR)
IN 5
SCP5
COMP
FB6
IN 6
SCP6
DTC2
BIAS6
C. H6
C. L6
OUT6
BIAS5
C. H5
C. L5
OUT5
VCC
BIAS4
GND
GATE4
C. H4
C. L4
OUT4
OUT3
C. L3
C. H3
BIAS3
OUT2
C. L2
FB5
SCP4
IN 4
FB4
RT
CT
SCP
DUTY
SOFT
VREF
STB3
STB
DTC3
FB3
IN 3
SCP3
SCP2
FB2
IN 2
GATE1
FB1
IN 1
SCP1
BIAS1
C. H1
C. L1
OUT1
BIAS2
C. H2
R1154 47K
C1155 10V2.2
R1153 12K
C1112 470P
R1111 150
C1111 470P
C1172 8200P
R1171 150
C1171 8200P
R1172 10K
C1174 39P
C1173 150P
C1113 150P
R1112 8200
C1114 39P
R1121 150
C1121 8200P
C1122 8200P
R1101 22K
C1101 100P
C1102 0.33
R1102 4700
C1103 0.047
R1107 2.2M
D1102 MA728
R1081 4700
R1103 4700
C1104 0.1
R1136 0
R1122 6800
C1124 39P
C1123 150P
C1133 150P
C1134 39P
R1132 6800
C1153 150P
C1107 1
R1109 10K
R1106 47K
Q1101 2SB1462-R (BUFFER)
D1101 MA120
QR1101 UN9214 (ERROR VOLTAGE DET)
R1104 12K
C1105 1
C1106 0.1
C1131 470P
C1132 2200P
R1131 150
C1151 0.015
C1152 8200P
R1151 150
C1141 0.022
C1142 2200P
R1141 150
C1143 150P
R1142 10K
C1144 39P
R1152 4700
C1154 82P
Q1011 FP102 (SWITCHING 5V)
L1011 ELL6TR560M 56µ
C1013 330P
C1011 0.1
C1012 3.3
R1011 6800
R1012 82
L1012 VLD0810N4R7 4.7µ
C1015 10V10
C1016 1
R1015 330
C1014 0.022
R1010 82
R1013 150
R1014 2700
L1015 10µ
L1016 10µ
L1013 10µ
L1014 10µ
L1017 10µ
C1019 1
C1119 1
C1017 1
C1018 1
C1118 10V10
C1117 1
C1028 1
R1008 47K
L1024 10µ
Q1022 2SK2151 (SWITCHING)
Q1021 FP102 (SWITCHING 3V)
L1021 ELL6TR150M 15µ
C1023 330P
R1021 2700
L1022 VLD0810N4R7 4.7µ
R1022 82
C1025 10V10
C1026 1
R1020 82
R1023 330
C1021 0.1
C1022 3.3
R1025 330
C1024 0.022
R1024 2700
L1023 4.7µ
L1026 10µ
L1029 10µ
C1027 1
C1129 1
QR1004 UN9115 (SWITCHING)
R1005 10K
C1128 1
L1025 10µ
Q1031 FP102 (SWITCHING 3V)
L1031 ELL6TR151M 150µ
C1033 3900P
R1031 2700
L1032 VLD0810N4R7 4.7µ
R1032 82
R1035 0
R1030 82
R1033 22
C1032 3.3
C1034 0.01
C1031 0.1
R1034 2700
C1036 1
C1035 10V10
C1058 10
C1251 10
L1052 330µ
R1254 47K
R1256 220K
Q1052 2SB970X (CCD ON: ON)
C1157 1
R1253 47K
R1255 47K
Q1056 2SB1462-R (CCD ON: ON)
C1156 10V10
Q1055 2SD2216 (CCD ON)(Ⓗ: ON)
R1159 47K
R1158 47K
L1043 10µ
Q1042 2SK2151 (SWITCHING)
Q1041 FP102 (SWITCHING 2V)
L1041 ELL6TR101M 100µ
C1043 0.01
R1041 1500
R1042 82
R1040 82
R1043 300
R1044 2700
C1041 0.1
C1042 3.3
L1042 VLD0810N4R7 4.7µ
C1047 1
C1045 10V10
C1046 1
D1103 MA110
C1029 1
T1001 VTP0499
Q1051 2SA1731-R (SWITCHING)
R1150 68
C1051 1000P
C1052 25V1
C1053 470P
R1051 27K
C1055 10
L1051 330µ
R1052 82
R1050 82
R1053 150
R1054 2700
D1051 MA729
C1056 1
R1056 47
D1052 MA729
D1151 MA8160-M
R1155 10K
D1152 1SS355
Q1061 FP102 (CAP VM)
L1061 ELL6TRD003
C1061 1500P
C1065 1
R1061 1200
D1061 MA728
C1063 2.2
Q1062 FP102 (CYL VM)
L1062 ELL6TRD004
C1062 3300P
C1066 1
C1064 2.2
R1062 1200
D1062 MA728
Q1053 2SD2216 (SWITCHING)
Q1054 XP1401 (STABILIZER)
R1057 13K
L1054 10µ
R1058 360
R1059 2700
R1157 3.3
R1156 3300
C1059 3.3
QR1055 UN9213 (CAM-8V)
Q1071 FP102 (SWITCHING 3V)
C1071 0.1
C1076 1
C1075 10V10
L1071 ELL6TR330M 33µ
L1072 VLD0810N4R7 4.7µ
R1071 2700
R1070 82
R1072 82
R1075 330
R1073 220
C1073 330P
C1074 0.022
R1074 2700
C1072 3.3
TO VTR MAIN CN (PS1001) (Page:3-50/F-1)
PP1001
1 CAM15V
2 A3V2
3 PROTECT
4 A GND
5 A GND
6 A GND
7 A GND
8 A GND
9 D GND
10 D GND
11 D GND
12 D GND
13 D GND
14 DIF3V
15 DIF3V
16 A3V
17 A3V
18 D5V
19 D5V
20 S2V
21 S5V
22 SPK5V
23 NOREG GND
24 NOREG GND
25 NOREG GND
26 NOREG GND
27 NOREG GND
28 CAP SW
29 CAP VM
30 CAP VM
31 BATT Ⓗ
32 —
33 SE GND
34 SE GND
35 A GND
36 A GND
37 LCD5V
38 LCD5V
39 LCD15V
40 INN BAT Ⓗ
41 MEMORY3V
42 VOUT3V
43 —
44 DAC3V
45 A GND
46 A GND
47 CCD ON Ⓗ
48 V REF
49 TRI WAVE
50 P ON Ⓗ
51 CYL VM
52 CYL VM
53 CYL SW
54 NOREG
55 NOREG
56 NOREG GND
57 NOREG GND
58 NOREG GND
59 S3V
60 HRA 5V
61 HRA 5V
62 REGA5V
63 REGA5V
64 REGD3V
65 REGD3V
66 REGD2V
67 REGD2V
68 D GND
69 D GND
70 D GND
71 D GND
72 D GND
73 A GND
74 A GND
75 A GND
76 A GND
77 A GND
78 3CCD3V
79 3CCD3V
80 CAM -8V

3-19. VTR MAIN CONNECTION SCHEMATIC DIAGRAM


TO PROCESS (PP302) (Page:3-33/B-22) PS3001
1 3CCD3V
2 REGD3V
3 REGD2V
4 D5V
5 D GND
6 D GND
7 A GND
8 A GND
9 CAM -8V
10 CAM3V A
11 REG5V CAM
12 CDS G
13 A GND
14 NOREG
15 NOREG GND
16 NOREG GND
17 NOREG
18 A GND
19 ADJ SIG
20 REG5V CAM
21 CAM3V A
22 CAM15V
23 MF LED
24 A GND
25 D GND
26 D GND
27 D5V
28 REGD2V
29 REGD3V
30 3CCD3V
TO POWER (PP1001) (Page:3-49/G-11) PS1001
1 CAM15V
2 A3V2
3 PROTECT
4 A GND
5 A GND
6 A GND
7 A GND
8 A GND
9 D GND
10 D GND
11 D GND
12 D GND
13 D GND
14 DIF3V
15 DIF3V
16 A3V
17 A3V
18 D5V
19 D5V
20 S2V
21 S5V
22 SPK5V
23 NOREG GND
24 NOREG GND
25 NOREG GND
26 NOREG GND
27 NOREG GND
28 CAP SW
29 CAP VM
30 CAP VM
31 BATT Ⓗ
32
33 SE GND
34 SE GND
35 A GND
36 A GND
37 LCD5V
38 LCD5V
39 LCD15V
40 INN BAT Ⓗ
41 MEMORY3V
42 VOUT3V
43
44 DAC3V
45 A GND
46 A GND
47 CCD ON Ⓗ
48 V REF
49 TRI WAVE
50 P ON Ⓗ
51 CYL VM
52 CYL VM
53 CYL SW
54 NOREG
55 NOREG
56 NOREG GND
57 NOREG GND
58 NOREG GND
59 S3V
60 HRA 5V
61 HRA 5V
62 REGA5V
63 REGA5V
64 REGD3V
65 REGD3V
66 REGD2V
67 REGD2V
68 D GND
69 D GND
70 D GND
71 D GND
72 D GND
73 A GND
74 A GND
75 A GND
76 A GND
77 A GND
78 3CCD3V
79 3CCD3V
80 CAM -8V
C6504 18V47
R6503
TO DRIVE (PS2001) (Page:3-46/D-1) PP2001
1 S3V
2 S3V
3 NOREG GND
4 NOREG GND
5 CYL VM
6 CYL VM
7 CYL SW
8 MIC GND
9 CYL GND
10 CYL GND
11 CAP VM
12 CAP VM
13 CAP FG
14 CAP RSF
15 CYL ERR
16 UNLOAD
17 S PHOTO
18 POS2
19 SNS LED
20 SREEL OUT
21 TREEL IN
22 T PHOTO
23 S TAB
24 MIC DT
25 C DOWN
26 MIC VDD
27 MIC CLK
28 SOLENOID
29 SOLENOID
30 SREEL IN
31 TREEL OUT
32 POS3
33 POS1
34 LOAD
35 TORQU LIMIT
36 CAP ERR
37 CYL ON
38 DRIVE CLK
39 CYL PG
40 CYL FG
41 CAP GND
42 CAP GND
43 D GND
44 D GND
45 TRI WAVE
46 CAP SW
47 NOREG
48 NOREG
49 S5V
50 S5V
TO PROCESS (PP301) (Page:3-33/H-22) PS3002
1 MF L2
2 MF L1
3 CAM TDO
4
5
6
7
8
9
10 REF CLK
11 CAM CLK
12 CSI0
13 CSI1
14 CSI2
15 CSI3
16 CSI4
17 CSI5
18 CSI6
19 CSI7
20 D GND
21 D GND
22
23
24 M REF
25 AFST
26 M A
27 M B
28 CAM TEST
29 VDA
30 CAM T
31 RESET1
32
33 CAM RST
34 CAM D3 OFF
35 VREF 2.7V
36 ZOOM AD
37 VREF 1.0V
38 IRIS OPEN
39 FNO
40
41 CAMO
42 CAM RTN
43 RTN FLD
44 CAM CLK
45 CAM SI
46 CAM SO
47 VTR T
48 EVR SCK
49 EVR SBI
50 EVR SBO
51 ZEBRA
52 SE GND
53 SE GND
54 EVR3V
55 E2 CS
56 E2 DATA
57 E2 CLK
58 P SAVE
59
60
61
62 TDI CAM
63 INV
64 INH
65 YSI7
66 YSI6
67 YSI5
68 YSI4
69 YSI3
70 YSI2
71 YSI1
72 YSI0
73
74
75
76
77
78
79
80
CAM VD
CAM T
CAM RESET
CV DATA
R6510 0
L6501 10µ
R6505 4700
R6506 4700
IC6501 TC7W241FU
IC6502 TC7W241FU
IC6503 TC7W241FU
R6515 4700
C6501 0.1
JIG SBO
EVR SCK
JIG SCK
EVR SBO
EVR SBI
JIG SBI
EVR SBI
EVR SCK
EVR SBO
CAM T
CAM SI
CAM CLK
R6504 0
C6507 8200
IC6505 TC7SH08FU
IC6506 TC7SH08FU
VREF 2.7V
VREF 1.0V
2.8
0
2.3
0.8
1.8
2.7
TO TOP OPERATION (FP6801) (Page:3-43/A-1) FP6001
1 REW/SER (-)
2 FF/SER (+)
3 SCAN4
4 PLAY/BL
5 STOP/FADE
6 PAUSE
12 SCAN3
TO SPEAKER P3001
1 SP OUT1
2 SP OUT2
TO REAR OPERATION (FP6701) (Page:3-43/B-1) FP6002
1 DEW
2 D GND
3 LIBATT (-)
4 LIBATT (+)
5 POWER SW
6 VTR LED
7 CAM/VTR
8 SCAN3
9 CAM LED
10 EJECT
11 ZOOM AD
12 VREF2.7V
13 VREF1.0V
14 S/S
15 SCAN2
16 PHOTO SHOT
TO FRONT (FP4801) (Page:3-81/E-7) FP4001
1 S5V
2 REMOTE CTL
3 NOREG GND
4 MF L2
5 MF L1
6 MF LED
7 TALLY
8 D GND
9 WINDSW Ⓗ
10 REGA5V
11 M OUT (L)
12 M GND
13 M OUT (R)
L6502 22µ
SOUND TITLE (Page:3-78)
TO FRONT
1 M OUT (L)
2 M OUT (R)
(C-5)
TO PS1001
3 REGA5V
(C-1)
TO CONTROL
(A-1)
S TITLE Ⓗ 4
TO VIDEO1
(C-1)
AD IN R 5
AD IN L 6
TO AUDIO
(B-5)
BUSY Ⓛ 7
STI 8
AUDIO (Page:3-77)
TO SPEAKER
9 SP OUT1
10 SP OUT2
(E-1)
TO SOUND TITLE
(A-1)
BUSY Ⓛ 15
STI 16
TO PS1001
11 SPK5V
12 REGA5V
(E-1)
TO CONTROL
(B-8)
SPK VOL 17
SPK ON Ⓛ 18
A MUTE 19
TO PP3002
13 A LCH OUT
14 A RCH OUT
(A-8)
TO VIDEO1
(E-8)
DA OUT L 20
DA OUT R 21
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ Ⓙ Ⓚ Ⓛ Ⓜ Ⓝ Ⓞ Ⓟ Ⓠ Ⓡ Ⓢ Ⓣ Ⓤ Ⓥ Ⓦ Ⓧ Ⓨ Ⓩ ⓐ ⓑ ⓒ
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

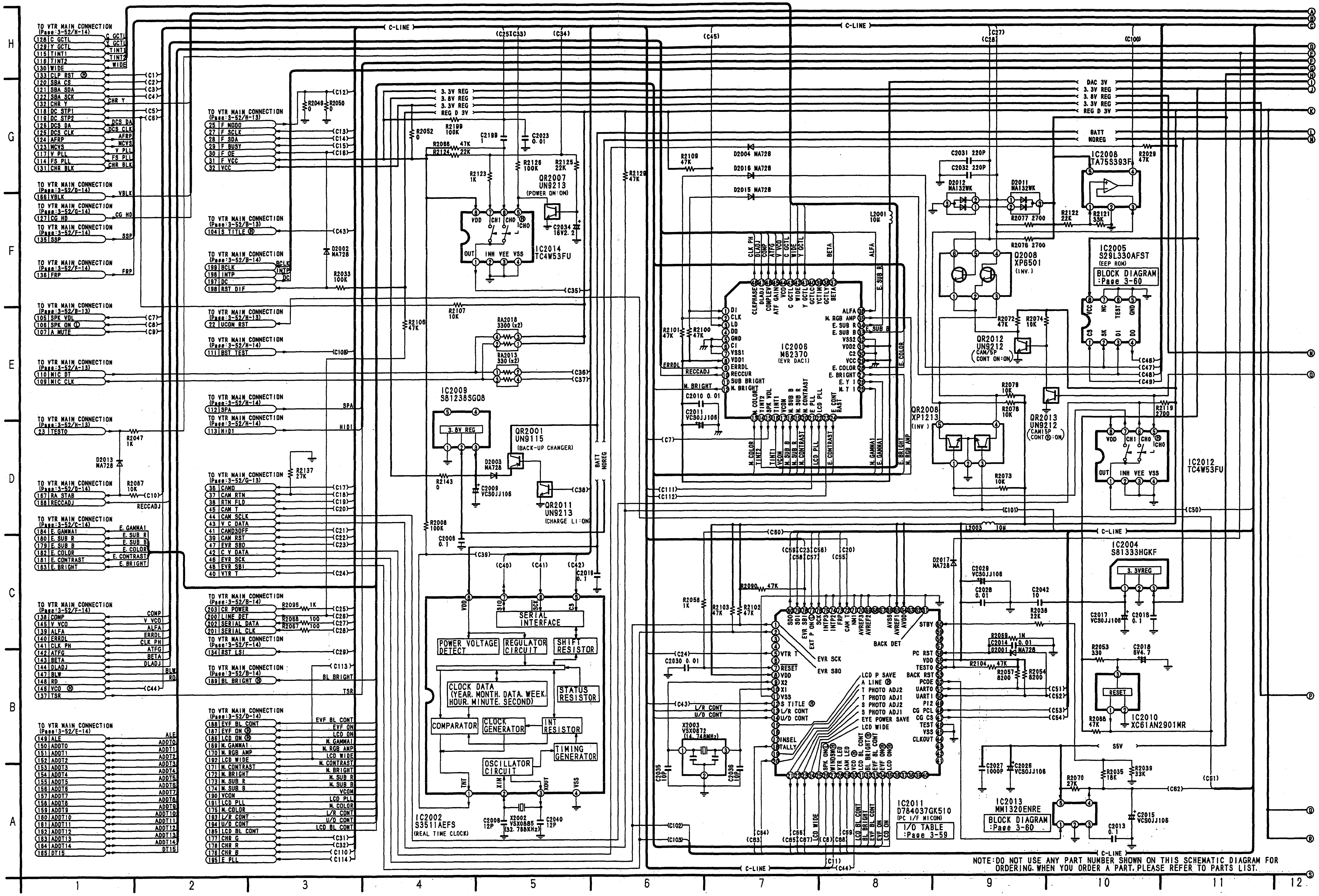
Back Page:
POWER Section


SYSTEM CONTROL & SERVO (Page:3-54)
VIDEO1 (Page:3-64)
VIDEO2 (Page:3-70)
DIGITAL-I/F (Page:3-76)
LCD (Page:3-74)
TO EVR PP3001
TO LCD-I/F (PS3502) (Page:3-78/E-1) PP3002
TO HEAD AMP (Page:3-44/G-1) FP3201
C3902 0.01
C3901 6.3V100
L3901 22μ
12
13
14
15
16
17
18
19
20
21
22
23

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

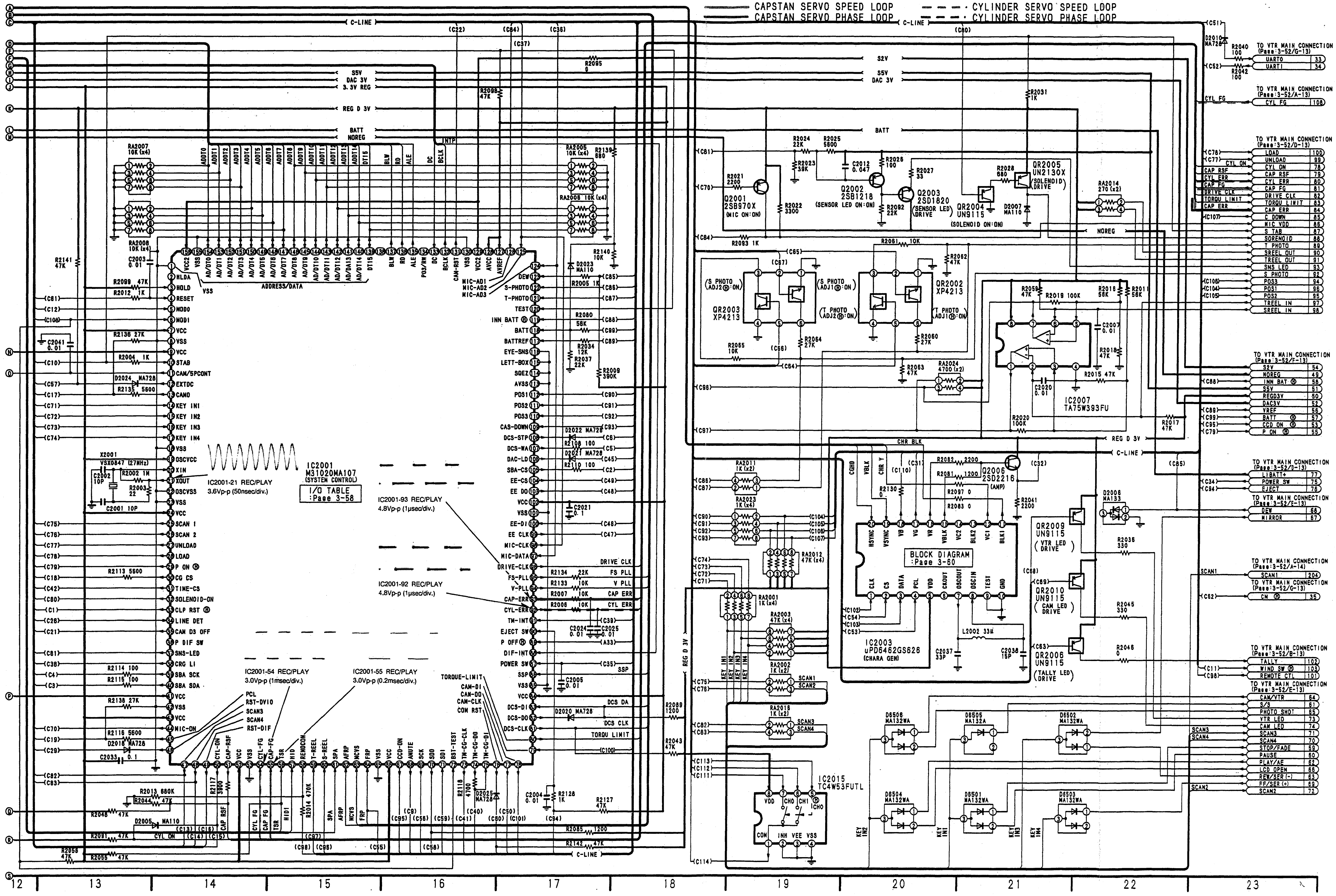
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)

3-20. SYSTEM CONTROL & SERVO SCHEMATIC DIAGRAM


C-LINE
TO VTR MAIN CONNECTION
IC2002
S3511AEFS
(REAL TIME CLOCK)
POWER VOLTAGE DETECT
REGULATOR CIRCUIT
SHIFT RESISTOR
SERIAL INTERFACE
CLOCK DATA (YEAR, MONTH, DATA, WEEK, HOUR, MINUTE, SECOND)
STATUS RESISTOR
COMPARATOR
CLOCK GENERATOR
INT RESISTOR
TIMING GENERATOR
OSCILLATOR CIRCUIT
IC2009
S81238SG08
3.8V REG
QR2001
UN9115
(BACK-UP CHANGER)
QR2011
UN9213
(CHARGE LI:ON)
QR2007
UN9213
(POWER ON:ON)
IC2014
TC4W53FU
IC2006
M62370
(EVR DAC1)
IC2011
D784037GK510
(PC I/F MICON)
I/O TABLE
:Page 3-59
IC2008
TA75S393F
Q2008
XP6501
(INV.)
QR2012
UN9212
QR2008
XP1213
(INV.)
QR2013
UN9212
IC2005
S29L330AFST
(EEP ROM)
BLOCK DIAGRAM
:Page 3-60
IC2012
TC4W53FU
IC2004
S81333HGKF
3.3VREG
IC2010
XC61AN2901MR
RESET
IC2013
MM1320ENRE
BLOCK DIAGRAM
:Page 3-60
X2003
VSX0672
(14.748MHz)
X2002
VSX0685
(32.768KHz)
DAC 3V
3.3V REG
3.8V REG
REG D 3V
BATT
NOREG
S5V
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

Back Page:
VTR MAIN CONNECTION Section


CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
C-LINE
S5V
DAC 3V
3.3V REG
REG D 3V
BATT
NOREG
S2V
IC2001
M31020MA107
(SYSTEM CONTROL)
I/O TABLE
:Page 3-58
IC2001-21 REC/PLAY
3.6Vp-p (50nsec/div.)
IC2001-93 REC/PLAY
4.8Vp-p (1μsec/div.)
IC2001-92 REC/PLAY
4.8Vp-p (1μsec/div.)
IC2001-54 REC/PLAY
3.0Vp-p (1msec/div.)
IC2001-55 REC/PLAY
3.0Vp-p (0.2msec/div.)
ADDRESS/DATA
X2001
VSX0847 (27MHz)
Q2001
2SB970X
(MIC ON:ON)
Q2002
2SB1218
(SENSOR LED ON:ON)
Q2003
2SD1820
(SENSOR LED DRIVE)
QR2004
UN9115
QR2005
UN2130X
(SOLENOID DRIVE)
(SOLENOID ON:ON)
QR2002
XP4213
QR2003
XP4213
(S PHOTO ADJ2 ON)
(S PHOTO ADJ1 ON)
(T PHOTO ADJ2 ON)
(T PHOTO ADJ1 ON)
IC2007
TA75W393FU
IC2003
uPD6462GS626
(CHARA GEN)
BLOCK DIAGRAM
:Page 3-60
Q2006
2SD2216
(AMP)
QR2009
UN9115
(VTR LED DRIVE)
QR2010
UN9115
(CAM LED DRIVE)
QR2006
UN9115
(TALLY LED DRIVE)
IC2015
TC4W53FUTL
D2008
MA133
D6506 MA132WA
D6505 MA132A
D6502 MA132WA
D6504 MA132WA
D6501 MA132WA
D6503 MA132WA
TO VTR MAIN CONNECTION (Page:3-52/G-13)
UARTO 33
UART1 34
TO VTR MAIN CONNECTION (Page:3-52/A-13)
CYL FG 108
TO VTR MAIN CONNECTION (Page:3-52/D-13)
LOAD 100
UNLOAD 99
CYL ON 78
CAP RSF 79
CYL ERR 80
CAP FG 81
DRIVE CLK 82
TORQU LIMIT 83
CAP ERR 84
C DOWN 85
MIC VDD 86
S TAB 87
SORENOID 88
T PHOTO 89
SREEL OUT 90
TREEL OUT 91
SNS LED 93
S PHOTO 92
POS3 94
POS1 96
POS2 95
TREEL IN 97
SREEL IN 98
TO VTR MAIN CONNECTION (Page:3-52/F-13)
S2V 54
NOREG 49
INN BAT 58
S5V 51
REGD3V 50
DAC3V 52
VREF 56
BATT 57
CCD ON 53
P ON 55
TO VTR MAIN CONNECTION (Page:3-52/D-13)
LIBATT+ 77
POWER SW 75
EJECT 76
TO VTR MAIN CONNECTION (Page:3-52/E-13)
DEW 66
MIRROR 67
TO VTR MAIN CONNECTION (Page:3-52/A-14)
SCAN1 204
TO VTR MAIN CONNECTION (Page:3-52/G-13)
CN 35
TO VTR MAIN CONNECTION (Page:3-52/B-13)
TALLY 102
WIND SW 103
REMOTE CTL 101
TO VTR MAIN CONNECTION (Page:3-52/E-13)
CAM/VTR 64
S/S 61
PHOTO SHOT 65
VTR LED 73
CAM LED 74
SCAN3 71
SCAN4 70
STOP/FADE 59
PAUSE 60
PLAY/AE 62
LCD OPEN 68
REW/SER(-) 63
FF/SER(+) 69
SCAN2 72
12
13
14
15
16
17
18
19
20
21
22
23

SYSTEM CONTROL I/O TABLE

IC2001 (M31020MA107): SYSTEM CONTROL MICROCOMPUTER

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	VSS	—	GND	60	S REEL	I	Supply Reel Pulse
2	HLDA	O	EXT-Bus Hold Acknowledge/BST TCK (CLK)	61	SPA	I	ATF Sampling Pulse
3	HOLD	I	EXT-Bus Hold Request	62	AFRP	I	AFRP
4	RESET	I	Reset	63	MCVS	I	MCVS
5	MOD0	I	Single Chip Mode=VSS, VSS	64	FRP	I	Frame Reference Pulse
6	MOD1	I	Memory Extend Mode=VSS, VCC	65	VSS	—	GND
7	VCC	—	Voltage	66	VCC	—	Voltage
8	VSS	—	GND	67	CCD ON	O	Camera CCD On
9	VCC	—	Voltage	68	A MUTE	O	Audio Mute
10	STAB	I	Safety Tab SW	69	SCK	O	Serial Clock
11	CAM/5PCONT	O	CAM/5P Select Signal	70	SDO	O	232C/5P
12	EXT DC	O	RS-232C I/F Connect Timing	71	SDI	I	232C/5P
13	CAMO	O	Camera Out	72	BST TEST	I	Boundary Scan Test SW
14	KEY IN1	I	Key Scan IN 1 /BST TD0 (data out)	73	TM CG CLK	O	Timer & Character Generator Serial Clock
15	KEY IN2	I	Key Scan IN 2 /BST TD1 (data in)	74	TM CG D0	O	Timer & Character Generator Serial Data Out
16	KEY IN3	I	Key Scan IN 3 /BST TMS (Test Mode Select)	75	TM CG D1	I	Timer & Character Generator Serial Data In
17	KEY IN4	I	Key Scan IN 4	76	COM RST	O	RS-232C I/F Reset
18	VSS	—	GND	77	CAM CLK	O	Camera Serial Clock
19	OSC VCC	—	Voltage	78	CAM D0	O	Camera Serial Data Out
20	XIN	I	27MHz	79	CAM D1	I	Camera Serial Data In
21	XOUT	O	27MHz	80	TORQUE LIMIT	O	Capstan Torque Limit
22	OSC VSS	—	GND	81	DCS CLK	O	CAS & DVIO Serial Clock
23	VSS	—	GND	82	DCS D0	O	CAS & DVIO Serial Data Out
24	VCC	—	Voltage	83	DCS DI	I	CAS & DVIO Serial Data In
25	SCAN 1	O	Key Scan Out 1	84	VCC	—	Voltage
26	SCAN 2	O	Key Scan Out 2	85	VSS	—	GND
27	UNLOAD	O	Mecha Unload	86	SSP	I	Sector Start Pulse
28	LOAD	O	Mecha Load	87	POWER SW	I	Power SW
29	PON Ⓗ	O	Power On Control	88	DIF INT	I	DIF INT
30	CG CS	O	H: CAM 4.5MHz, L: DV 1027MHz	89	P OFF Ⓗ	I	Camera Remote Control Power
31	TIME CS	O	Timer Chip Select	90	EJECT SW	I	Eject SW
32	SQL ON	O	Solenoid On	91	TM INT	I	Timer Interrupt Request
33	CLP RST Ⓗ	O	Y CLP Discharge	92	CYL ERR	O	Cylinder Error
34	LIN DET	I	Line in Signal Detect	93	CAP ERR	O	Capstan Error
35	CAM D3 OFF	O	CAM Power Manage (18MHz Power Control) H: ON	94	V PLL	O	Video PLL
36	P DIF SW	—	(N.C.)	95	FS PLL	O	FS PLL (ATF ERR for Linear Arrangement)
37	SNS LED	O	Tape Sensor LED	96	DRIVE CLK	O	Cylinder Drive Clock
38	CRG L1	O	Charge Clock Data Out ON/OFF	97	MIC DATA	I/O	MIC Data In/Out (12C)
39	SBA SCK	O	Sub Audio Serial	98	MIC CLK	O	MIC ON (MIC/Contact ID)
40	SBA SDA	O	Sub Audio Serial	99	EE CLK	O	EEPROM & DAC Clock
41	VCC	—	Voltage	100	EE DI	I	EEPROM & DAC Data In
42	VSS	—	GND	101	VSS	—	GND
43	VCC	—	Voltage	102	VCC	—	Voltage
44	MID ON	O	MIC ON (MIC/Contact ID)	103	EE DO	O	EEPROM & DAC Data Out
45	PCL	O	Field Detect	104	EE DS	O	EEPROM Chip Select
46	RST DVIO	O	DV10, CAS, EDA Reset	105	SBA CS	O	Sub Audio Chip Select
47	SCAN 3	O	Key Scan Out 3	106	DAC LD	O	DAC Load
48	SCAN 4	O	Key Scan Out 4	107	DCS WA	O	DCS Serial Start
49	RST DIF	O	DIF LSI Reset	108	DCS STP	O	DCS Serial Stop
50	CYL ON	O	Cylinder On	109	CAP DWN	I	Cassette Down SW
51	CAP RSF	O	Capstan On	110	POS3	I	Mecha Position SW3
52	VCC	—	Voltage	111	POS2	I	Mecha Position SW2
53	VSS	—	GND	112	POS1	I	Mecha Position SW1
54	CYL FG	I	Cylinder FG	113	AVSS	—	GND
55	CAP FG	I	Capstan FG	114	SQEZ	I	SQEZ
56	TSR	I	Track Start Referene	115	LETT BOX	I	Letter Box Detect
57	HID	I	HSW	116	EVE SNS	I	Eye Sensor Detect
58	REMODON	I	Remote Control Pulse	117	BATT REF	I	Battery Reference
59	T REEL	I	Take Up Reel Pulse	118	BATT	I	Battery Voltage Detect

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
119	INN BATT Ⓗ	I	INN. BATT/EXT. BATT Detect	138	NC	—	(N.C.)
120	TEST	I	Test SW	139	DT15	I/O	EXT-Memory Address/Data BUS
121	T PHOT	I	Dew Detect	140	ADDT14	I/O	EXT-Memory Address/Data BUS
122	S PHOT	I	Tape Take-up Photo Sensor Detect	141	ADDT13	I/O	EXT-Memory Address/Data BUS
123	DEW	I	Tape Supply Photo Sensor Detect	142	ADDT12	I/O	EXT-Memory Address/Data BUS
124	MIC AD3	I	Contact ID Detect 3	143	ADDT11	I/O	EXT-Memory Address/Data BUS
125	MIC AD2	I	Contact ID Detect 2	144	ADDT10	I/O	EXT-Memory Address/Data BUS
126	MIC AD1	I	Contact ID Detect 1	145	ADDT9	I/O	EXT-Memory Address/Data BUS
127	A VREF	—	Voltage Reference	146	ADDT8	I/O	EXT-Memory Address/Data BUS
128	A VCC	—	Voltage	147	ADDT7	I/O	EXT-Memory Address/Data BUS
129	VCC2	—	Voltage	148	ADDT6	I/O	EXT-Memory Address/Data BUS
130	VSS	—	GND	149	ADDT5	I/O	EXT-Memory Address/Data BUS
131	CAM RST	O	Camera Reset	150	ADDT4	I/O	EXT-Memory Address/Data BUS
132	BCLK	O	B CLK	151	ADDT3	I/O	EXT-Memory Address/Data BUS
133	DC	I	Data Complete for EXT-memory Mode	152	ADDT2	I/O	EXT-Memory Address/Data BUS
134	PO3/RW	O	(N.C.)	153	ADDT1	I/O	EXT-Memory Address/Data BUS
135	ALE	O	Address Latch Enable for EXT-Memory Mode	154	ADDT0	I/O	EXT-Memory Address/Data BUS
136	RD	O	Read Strobe for EXT-Memory Mode	155	VSS	—	GND
137	BLW	O	Byte Low Write for EXT-Memory Mode	156	VCC2	—	Voltage

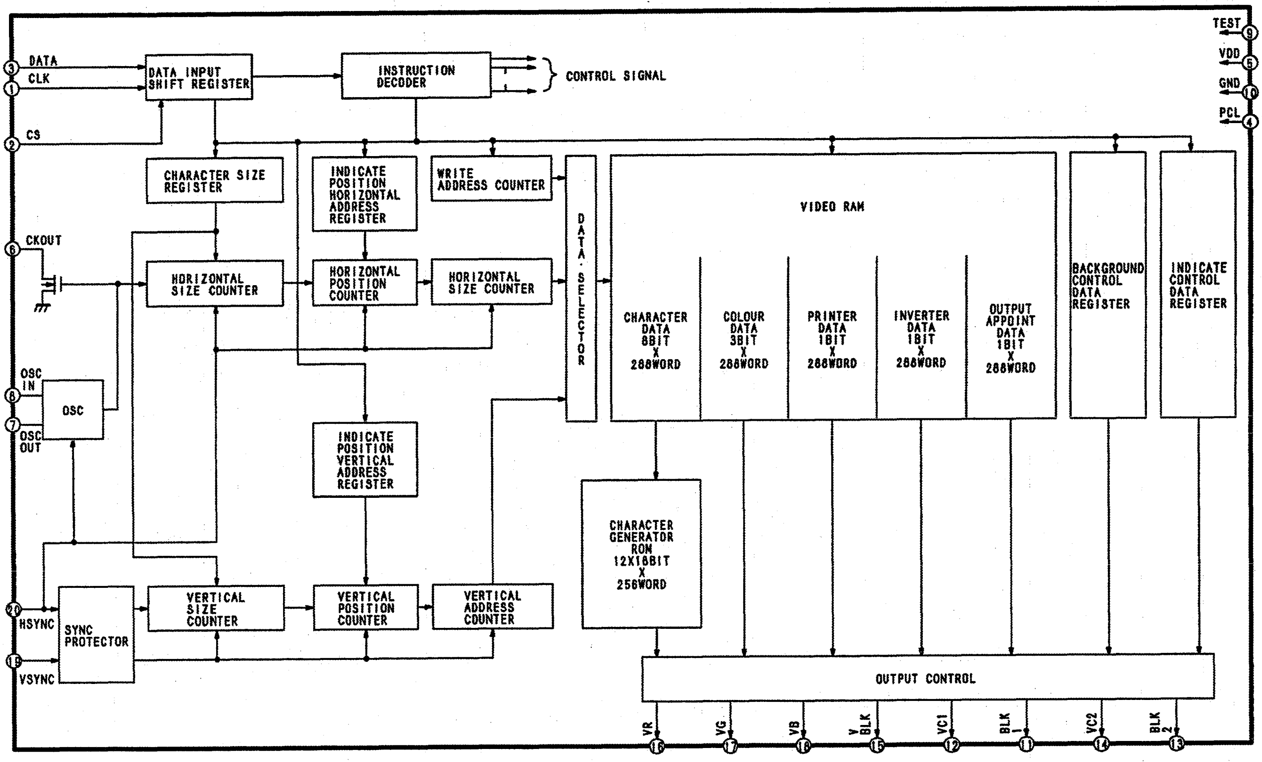
IC2011 (D784037GK510): RS-232C INTERFACE MICROCOMPUTER

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	EVR SCK	O	Serial Clock Signal for SYNC Serial Communication (To Camera Micom)
2	EVR SBO	O	Serial Data Signal for SYNC Serial Communication (To Camera Micom)
5	VTR T	O	SYNC Serial Communication Enable Signal for Camera Micom
7	RESET	I	Reset Signal
8	VDD	—	VDD (+3V)
9	X2	O	Oscillator (14.7456MHz)
10	X1	I	Oscillator (14.7456MHz)
11	VSS	—	GND
12	S TITLE Ⓗ	O	Sound Effect Control Signal
13	L/R CONT	O	LCD Driver Control (L/R Invert)
14	U/D CONT	O	LCD Driver Control (U/D Invert)
15	LCD P SAVE	—	(N.C.)
17	INSEL	—	(N.C.)
18	TALLY	O	TALLY LED Control
19	A LINE Ⓗ	—	(N.C.)
20	T PH AD2	O	Take u
21	T PH AD1	O	Take u
22	S PH AD2	O	Supply Tape Sensor
23	S PH AD1	O	Supply Tape Sensor
24	EYE P SAVE	—	(N.C.)
25	LCD WIDE	O	LCD Driver Wide Select
26	SPK ON Ⓛ	O	Speaker ON
27	WIDNSW Ⓗ	O	Noise Silent
28	VTR LED	O	VTR Mode LED
29	CAM LED	O	CAMERA Mode LED
30	VCO Ⓗ	O	VCO Test Mode Ⓗ
31	LCD BL CONT	O	LCD Back Light Control Signal
32	BL BRIGHT Ⓗ	O	Back Light Bright Control Signal
33	EVF BL CONT	O	EVF Back Light Control Signal
34	EVF ON	O	EVF ON
35	LCD ON	O	LCD ON
44	CLKOUT	—	(N.C.)
45	VSS	—	GND

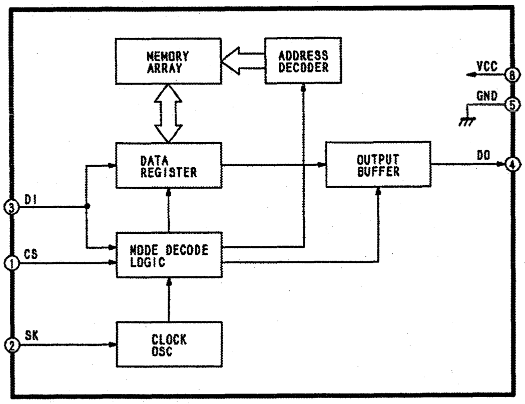
PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
46	TEST	—	GND
47	CGCS	O	CG CS
48	CGPCL	O	CG PCL
49	P12	—	(N.C.)
50	UARTI	I	RS-232C Data
51	UARTO	O	RS-232C Data
52	PCOE	O	RS-232C Driver Output Enable
53	BACK RST	—	(N.C.)
54	TEST0	I	VTR Test Signal (H: Normal, L: Test Mode)
55	VDD	—	VDD (+3V)
56	PC RST	I	Reset Signal Detect (AD Input)
60	STBY	I	RS-232C Cable Connect Confirm
61	BACK DET	—	GND
64	AVDD	—	Voltage for AD Converter (+3V)
65	AVREF1	—	Reference Voltage for AD Converter (+3V)
66	AVSS	—	GND for AD Converter
67	ANO0	—	(N.C.)
68	ANO1	—	(N.C.)
69	AVREF2	—	GND
70	AVREF3	—	GND
71	NM1	—	GND
72	CAM T	I	Camera Service/232C Micom Select Signal (H: 232C, L: Camera Service)
73	FRP	I	Frame SYNC Signal
76	SCK	I	Serial Clock Signal for SYNC Serial Communication (To VTR Micom)
77	EXT P ON Ⓛ	I	SYNC Serial Communication Enable Signal for VTR Micom
78	EVR SBI	I	Serial Data Input for SYNC Serial Communication (To Camera Micom)
79	SDI	I	Serial Data for SYNC Serial Communication (To VTR Micom)
80	SDO	O	Serial Data for SYNC Serial Communication (To VTR Micom)

SYSTEM CONTROL IC BLOCK

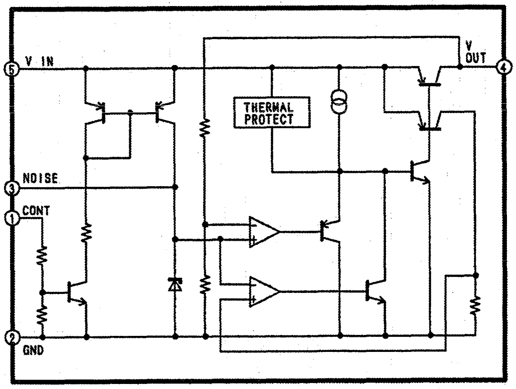
IC2003:uPD6462GS626
(SCHEMATIC DIAGRAM:Page 3-57/C-20)


DATA
CLK
CS
CKOUT
OSC IN
OSC OUT
HSYNC
VSYNC
3
1
2
6
8
7
20
19
DATA INPUT SHIFT REGISTER
INSTRUCTION DECODER
CONTROL SIGNAL
CHARACTER SIZE REGISTER
INDICATE POSITION HORIZONTAL ADDRESS REGISTER
WRITE ADDRESS COUNTER
HORIZONTAL SIZE COUNTER
HORIZONTAL POSITION COUNTER
HORIZONTAL SIZE COUNTER
OSC
INDICATE POSITION VERTICAL ADDRESS REGISTER
SYNC PROTECTOR
VERTICAL SIZE COUNTER
VERTICAL POSITION COUNTER
VERTICAL ADDRESS COUNTER
DATA · SELECTOR
VIDEO RAM
CHARACTER DATA 8BIT X 288WORD
COLOUR DATA 3BIT X 288WORD
PRINTER DATA 1BIT X 288WORD
INVERTER DATA 1BIT X 288WORD
OUTPUT APPOINT DATA 1BIT X 288WORD
BACKGROUND CONTROL DATA REGISTER
INDICATE CONTROL DATA REGISTER
CHARACTER GENERATOR ROM 12X18BIT X 256WORD
OUTPUT CONTROL
TEST 9
VDD 5
GND 10
PCL 4
VR 16
VG 17
VB 18
V BLK 15
VC1 12
BLK 1 11
VC2 14
BLK 2 13

IC2005:S29L330AFST
(SCHEMATIC DIAGRAM:Page 3-55/F-10)


MEMORY ARRAY
ADDRESS DECODER
DATA REGISTER
OUTPUT BUFFER
MODE DECODE LOGIC
CLOCK OSC
VCC 8
GND 5
DO 4
DI 3
CS 1
SK 2

IC2013:MM1320ENRE
(SCHEMATIC DIAGRAM:Page 3-55/A-9)


V IN 5
V OUT 4
THERMAL PROTECT
NOISE 3
CONT 1
GND 2

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC2001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	3.3	3.3	3.3	0	3.3	3.3	0	3.8	0	1.7	3.3	0	2.8	2.8	2.8	2.8	0	3.3	1.6
PLAY	0	3.3	3.3	3.3	0	3.3	3.3	0	3.8	0	1.7	3.3	0	2.8	2.8	2.8	2.8	0	3.3	1.6
REC	0	3.3	3.3	3.3	0	3.3	3.3	0	3.8	0	1.7	3.3	0	2.8	2.8	2.8	2.8	0	3.3	1.6
F.F	0	3.3	3.3	3.3	0	3.3	3.3	0	3.8	0	1.7	3.3	0	2.8	2.8	2.8	2.8	0	3.3	1.6
REW	0	3.3	3.3	3.3	0	3.3	3.3	0	3.8	0	1.7	3.3	0	2.8	2.8	2.8	2.8	0	3.3	1.6

REF. NO.	IC2001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	1.6	0	0	3.3	3.3	3.3	0	0	3.2	3.3	2.8	3.3	0	2.8	2.8	3.3	3.3	3.3	3.3	3.3
PLAY	1.6	0	0	3.3	3.3	3.3	0	0	3.2	0	2.8	3.3	0	2.8	0	0	3.3	3.3	3.3	0
REC	1.6	0	0	3.3	3.3	3.3	0	0	3.2	3.3	2.8	3.3	0	2.8	3.3	3.3	3.3	3.3	3.3	3.3
F.F	1.6	0	0	3.3	3.3	3.3	0	0	3.2	0	2.8	3.3	0	2.8	0	0	3.0	3.3	3.3	0
REW	1.6	0	0	3.3	3.3	3.3	0	0	3.2	0	2.8	3.3	0	2.8	0	0	3.0	3.3	3.3	0

REF. NO.	IC2001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.3	0	3.3	3.3	1.7	3.3	3.3	3.3	3.3	0	1.4	3.3	0	1.4	2.8	1.4	1.4	2.7	2.8	0.1
PLAY	3.3	0	3.3	3.3	1.7	3.3	3.3	3.3	3.3	0	0	3.3	0	1.4	1.6	1.4	1.4	2.7	1.9	2.5
REC	3.3	0	3.3	3.3	1.6	3.3	3.3	3.3	3.3	0	0	3.3	0	1.4	1.3	2.8	1.4	2.7	2.1	2.0
F.F	3.3	0	3.3	3.3	1.6	3.3	3.3	3.3	3.3	0	3.3	3.3	0	1.4	1.6	1.4	1.4	2.7	1.6	1.6
REW	3.3	0	3.3	3.3	1.6	3.3	3.3	3.3	3.3	0	3.3	3.3	0	1.4	1.6	1.4	1.4	2.7	1.6	1.6

REF. NO.	IC2001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	1.4	0	1.4	0	3.3	3.3	0	2.7	2.6	0.1	3.3	3.3	3.3	1.3	3.3	2.4	1.8	2.6	0.2
PLAY	0	1.4	0	1.4	0	3.3	0	3.3	2.7	2.6	2.5	3.3	3.3	3.3	1.3	3.3	2.4	1.8	2.6	0.2
REC	0	1.4	0	1.4	0	3.3	3.3	0	2.7	2.6	0.1	3.3	3.3	3.3	1.3	3.3	2.4	1.8	2.6	0.2
F.F	0	1.4	0	1.4	0	3.3	0	3.3	2.7	2.6	2.5	3.3	3.3	3.3	1.3	3.3	2.4	1.8	2.6	0.2
REW	0	1.4	0	1.4	0	3.3	0	3.3	2.7	2.6	2.5	3.3	3.3	3.3	1.3	3.3	2.4	1.8	2.6	0.2

REF. NO.	IC2001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.2	2.5	2.2	3.3	0	0	0	3.0	0	3.3	3.3	1.6	0	0	0	1.6	2.8	2.8	0	0.7
PLAY	3.2	2.5	2.2	3.3	0	0	0	3.0	0	3.3	3.3	1.6	1.2	0	1.5	1.6	2.8	2.8	0	1.1
REC	3.2	2.5	2.2	3.3	0	0	0	2.9	0	3.3	—	1.6	1.2	0	0	1.6	2.8	2.8	0	1.0
F.F	3.2	2.5	2.2	3.3	0	0	0	2.9	0	3.3	—	1.6	1.2	0	1.5	1.6	2.8	2.8	3.3	1.4
REW	3.2	2.5	2.2	3.3	0	0	0	2.9	0	3.3	3.3	1.6	1.2	0	1.5	1.6	2.8	2.8	3.3	1.0

REF. NO.	IC2001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	0	3.3	0	0	3.2	0	2.6	2.9	0	0	0	0	0	0	0	0	1.5	2.1	0	3.3
PLAY	0	3.3	0	0	3.2	0	2.6	2.9	0	0	0	0	0	0	0	0	1.5	2.1	0	1.3
REC	0	3.3	0	0	3.2	0	2.6	2.9	0	0	0	0	0	0	0	0	1.5	2.1	0	3.3
F.F	0	3.3	0	0	3.2	0	2.6	2.9	0	2.8	2.8	0	0	0	0	0	1.5	2.1	0	3.3
REW	0	3.3	0	0	3.2	0	2.6	2.9	0	2.8	2.8	0	0	0	0	0	1.5	2.1	0	3.3

REF. NO.	IC2001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	0	0	0	2.8	2.8	2.8	3.3	3.3	2.3	0	2.3	1.0	0	0	0	2.3	2.2	2.2	0.1	0.1
PLAY	0	0	0	2.8	2.8	2.8	3.3	3.3	2.3	0	2.3	1.0	0	0	0	2.2	2.2	2.2	0.1	0.1
REC	0	0	0	2.8	2.8	2.8	3.3	3.3	2.3	0	2.3	1.0	0	0	0	2.3	2.2	2.2	0.1	0.1
F.F	0	0	0	2.8	2.8	2.8	3.3	3.3	2.3	0	2.3	1.0	0	0	0	2.2	2.2	2.2	0.1	0.1
REW	0	0	0	2.8	2.8	2.8	3.3	3.3	2.3	0	2.3	1.0	0	0	0	2.3	2.2	2.2	0.1	0.1

REF. NO.	IC2001																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156				
STOP	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	2.3				
PLAY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	2.3				
REC	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	2.3				
F.F	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	2.3				
REW	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	2.3				

REF. NO.	IC2002																			
MODE	1	2	3	4	5	6	7	8												
STOP	3.3	0.5	0.6	0	2.8	3.3	1.3	3.6												
PLAY	3.3	0.5	0.6	0	2.8	3.3	1.3	3.6												
REC	3.3	0.5	0.6	0	2.8	3.3	1.3	3.6												
F.F	3.3	0.5	0.7	0	2.8	3.3	1.3	3.6												
REW	3.3	0.5	0.7	0	2.8	3.3	1.3	3.6												

REF. NO.	IC2003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.3	0	0.7	2.8	2.8	0	1.1	1.2	0	0	0	0	0	0	0.1	0.1	0.1	0	2.4	2.2
PLAY	2.3	0	0.9	2.8	2.8	0	1.1	1.2	0	0	0	0	0	0	0.1	0	0	0	2.3	2.2
REC	2.3	0	0.7	2.8	2.8	0	1.1	1.2	0	0	0	0	0	0	0.1	0.1	0.1	0	2.4	2.2
F.F	2.3	0	0.9	2.8	2.8	0	1.1	1.2	0	0	0	0	0	0	0.1	0	0	0	2.3	2.2
REW	2.3	0	0.7	2.8	2.8	0	1.1	1.2	0	0	0	0	0	0	0.1	0	0	0	2.3	2.2

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC2004										IC2005									
MODE	1	2	3								1	2	3	4	5	6	7	8		
STOP	3.3	0	7.6								0	0	0	0.9	0	0	0	3.3		
PLAY	3.3	0	7.6								0	0	0	0.6	0	0	0	3.3		
REC	3.3	0	7.6								0	0	0	0.9	0	0	0	3.3		
F.F	3.3	0	7.6								0	3.3	0	0.5	0	0	0	3.3		
REW	3.3	0	7.6								0	3.3	0	0.5	0	0	0	3.3		
REF. NO.	IC2006																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.2	0.2	0.2	0	0	0	0	2.8	0.9	1.7	2.5	1.8	1.1	1.8	2.2	1.8	1.7	1.6	1.6	1.5
PLAY	0.2	0.2	0.2	0	0	0	0	2.8	0.9	1.7	2.5	1.8	1.1	1.8	2.2	1.8	1.7	1.6	1.6	1.5
REC	0.2	0.2	0.2	0	0	0	0	2.8	0.9	1.7	2.5	1.8	1.1	1.8	2.2	1.8	1.7	1.6	1.6	1.5
F.F	0.2	2.8	0.2	0	0	0	0	2.8	0.9	1.7	2.5	1.8	1.1	1.8	2.2	1.8	1.7	1.6	1.6	1.5
REW	0.2	2.8	0.2	0	0	0	0	2.8	0.9	1.7	2.5	1.8	1.1	1.8	2.2	1.8	1.7	1.6	1.6	1.5
REF. NO.	IC2006																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	2.0	1.8	2.0	1.4	1.1	0.4	0.9	0.8	2.8	0	2.8	0	1.5	1.6	1.3	1.6	1.4	2.8	2.8	2.8
PLAY	2.0	1.8	2.0	1.4	1.2	0.4	0.9	0.8	2.8	0	2.8	0	1.5	1.6	1.3	1.6	1.4	2.8	2.8	2.8
REC	2.0	1.8	2.0	1.4	1.2	0.4	0.9	0.8	2.8	0	2.8	0	1.5	1.6	1.3	1.6	1.4	2.8	2.8	2.8
F.F	2.0	1.8	2.0	1.4	1.2	0.4	0.9	0.8	2.8	0	2.8	0	1.5	1.6	1.3	1.6	1.4	2.8	2.8	2.8
REW	2.0	1.8	2.0	1.4	1.2	0.4	0.9	0.8	2.8	0	2.8	0	1.5	1.6	1.3	1.6	1.4	2.8	2.8	2.8
REF. NO.	IC2006																			
MODE	41	42	43	44	45	46	47	48												
STOP	0	0	0	1.6	1.8	1.3	1.0	1.3												
PLAY	0	0	0	1.6	1.8	1.3	1.0	1.3												
REC	0	0	0	1.6	1.8	1.3	1.0	1.3												
F.F	0	0	0	1.6	1.8	1.3	1.0	1.3												
REW	0	0	0	1.6	1.8	1.3	1.0	1.3												
REF. NO.	IC2007										IC2008									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5					
STOP	2.8	1.1	1.6	0	1.6	0.2	2.8	2.8			3.0	0	4.9	2.6	5.1					
PLAY	2.8	2.3	1.6	0	1.6	2.4	2.8	2.8			3.0	0	4.8	2.6	5.1					
REC	2.8	2.3	1.6	0	1.6	2.4	2.8	2.8			3.0	0	4.9	2.6	5.1					
F.F	1.5	1.1	1.3	0	1.3	1.2	1.5	2.8			3.0	0	4.8	2.6	5.1					
REW	1.5	1.1	1.3	0	1.3	1.2	1.5	2.8			3.0	0	4.8	2.6	5.1					
REF. NO.	IC2009										IC2010									
MODE	1	2	3	4	5						1	2	3							
STOP	0	7.6	3.8	0	0						3.3	0	3.3							
PLAY	0	7.6	3.8	0	0						3.3	0	3.3							
REC	0	7.6	3.8	0	0						3.3	0	3.3							
F.F	0	7.6	3.8	0	0						3.3	0	3.3							
REW	0	7.6	3.8	0	0						3.3	0	3.3							
REF. NO.	IC2011																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.3	0.6	0	0	2.8	0	2.8	2.8	1.4	1.1	0	0	0	2.8	2.8	0	0	2.8	0	0
PLAY	2.2	0.8	0	0	2.8	0	2.8	2.8	1.4	0.9	0	0	0	2.8	2.8	0	0	2.8	0	0
REC	2.3	0.6	0	0	2.8	0	2.8	2.8	1.4	1.0	0	0	0	2.8	2.8	0	0	0	0	0
F.F	2.2	0.8	0	0	2.8	0	2.8	2.8	1.4	0.9	0	0	0	2.8	2.8	0	0	2.8	0	0
REW	2.1	0.8	0	0	2.8	0	2.8	2.8	1.4	0.9	0	0	0	2.8	2.8	0	0	2.8	0	0
REF. NO.	IC2011																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	2.8	0	2.8	0	0	2.8	0	2.8	0	0	2.8	0	0	0	2.8	0	0	0	0	0
PLAY	2.8	0	2.8	0	0	0	0	0	2.8	0	2.8	0	0	0	2.8	0	0	0	0	0
REC	2.8	0	2.8	0	0	2.8	0	2.8	0	0	2.8	0	0	0	2.8	0	0	0	0	0
F.F	2.8	0	2.8	0	0	2.8	0	0	2.8	0	2.8	0	0	0	2.8	0	0	0	0	0
REW	2.8	0	2.8	0	0	2.8	0	0	2.8	0	2.8	0	0	0	2.8	0	0	0	0	0
REF. NO.	IC2011																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	0	0	0	0	0	0	2.8	0	2.8	2.8	0	0	2.8	2.8	2.7	0	0	0	2.1
PLAY	0	0	0	0	0	0	0	2.8	0	2.8	2.8	0	0	2.8	2.8	2.7	0	0	0	2.1
REC	0	0	0	0	0	0	0	2.8	0	2.8	2.8	0	0	2.8	2.8	2.7	0	0	0	2.1
F.F	0	0	0	0	0	0	0	2.8	0	2.8	2.8	0	0	2.8	2.8	2.7	0	0	0	2.1
REW	0	0	0	0	0	0	0	2.8	0	2.8	2.8	0	0	2.8	2.8	2.7	0	0	0	2.1
REF. NO.	IC2011																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	0	2.8	2.8	0	0	0	0	0	0	0	1.4	0	0	2.7	2.8	2.8	2.7	0.1
PLAY	0	0	0	2.8	2.8	0	0	0	0	0	0	0	1.4	0	0	2.7	2.8	2.8	2.6	2.5
REC	0	0	0	2.8	2.8	0	0	0	0	0	0	0	1.4	0	0	2.7	2.8	2.8	2.6	0.1
F.F	0	0	0	2.8	2.8	0	0	0	0	0	0	0	1.4	0	0	2.7	2.8	2.8	2.6	2.5
REW	0	0	0	2.8	2.8	0	0	0	0	0	0	0	1.4	0	0	2.7	2.8	2.8	2.6	2.5

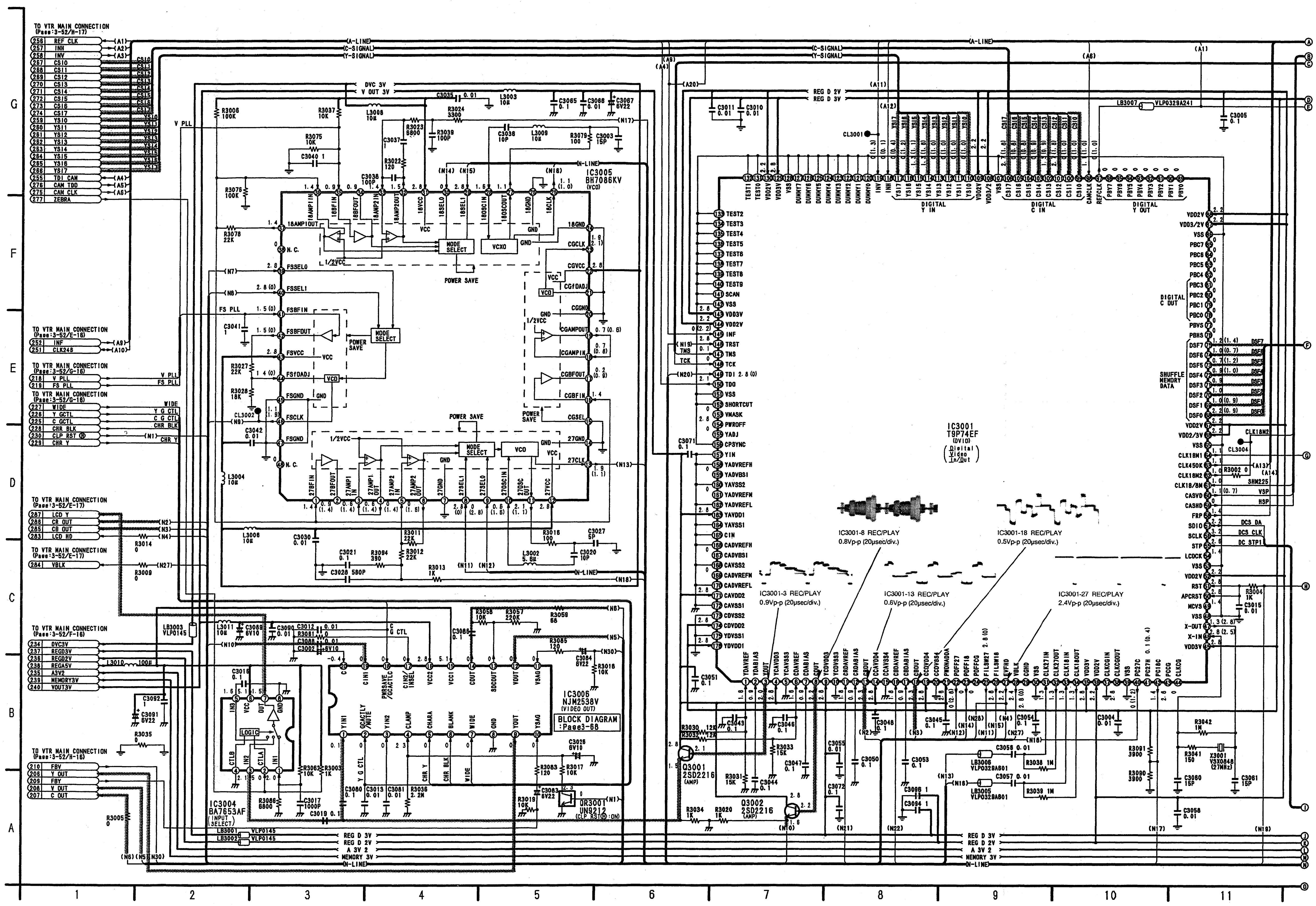
SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC2012										IC2013									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5					
STOP	2.4	0	0	0	1.7	2.7	2.3	3.3			0	0	0	3.2	5.1					
PLAY	2.4	0	0	0	1.7	2.7	2.3	3.3			0	0	0	3.2	5.1					
REC	2.4	0	0	0	1.7	2.7	2.3	3.3			0	0	0	3.2	5.1					
F.F	2.4	0	0	0	1.7	2.7	2.3	3.3			0	0	0	3.2	5.1					
REW	2.4	0	0	0	1.7	2.7	2.3	3.3			0	0	0	3.2	5.1					
REF. NO.	IC2014										IC2015									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
STOP	0	0	0	0	0	3.3	0	3.3			2.0	0	0	0	0	2.0	2.0	2.8		
PLAY	0	0	0	0	0	3.3	0	3.3			2.0	0	0	0	0	2.0	2.0	2.8		
REC	0	0	0	0	0	3.3	0	3.3			2.0	0	0	0	0	2.0	2.0	2.8		
F.F	0	0	0	0	0	3.3	0	3.3			2.0	0	0	0	0	2.0	2.0	2.8		
REW	0	0	0	0	0	3.3	0	3.3			2.0	0	0	0	0	2.0	2.0	2.8		

SYSTEM CONTROL & SERVO TRs DC VOLTAGE CHART (SP MODE)

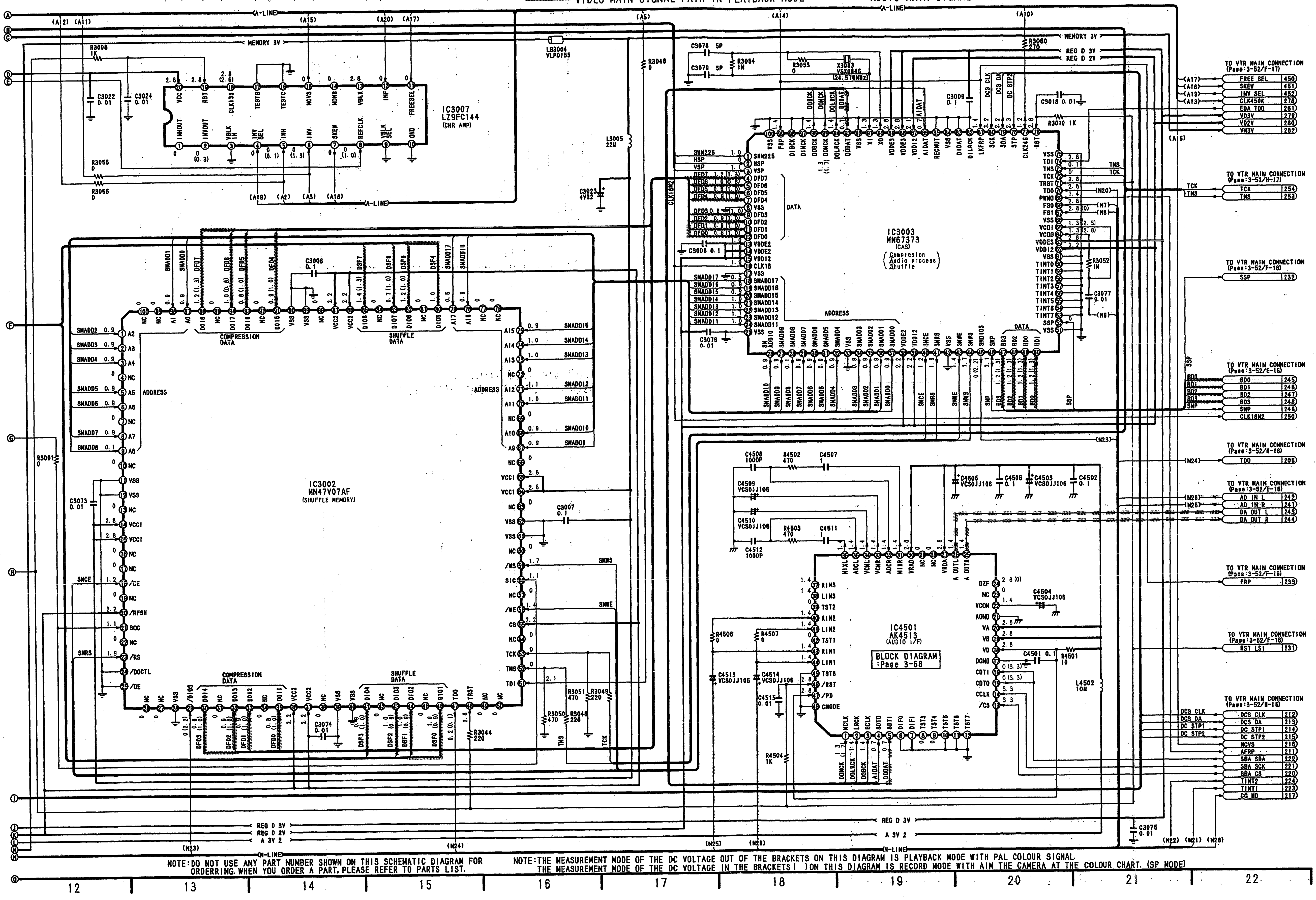
REF. NO.	Q2001			Q2002			Q2003			Q2006			Q2008					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	1	2	3	4	5	6
STOP	2.8	2.8	3.3	5.1	0	4.7	0.2	7.6	0	0.1	2.8	0.1	1.5	1.5	0.1	4.9	0.1	4.8
PLAY	2.8	2.8	3.3	5.1	0	4.7	0.2	7.6	0	0	2.8	0.1	1.5	1.5	0.1	4.8	0.1	4.8
REC	2.8	2.8	3.3	5.1	0	4.7	0.2	7.6	0	0	2.8	0.1	1.5	1.5	0.1	4.8	0.1	4.8
F.F	2.8	2.8	3.3	5.1	0.5	4.7	0.5	7.6	0.5	0.1	2.8	0.1	1.4	1.4	0.1	4.9	0.1	4.8
REW	2.8	2.8	3.3	5.1	0.5	4.7	0.5	7.6	0.5	0.1	2.8	0.1	1.4	1.4	0.1	4.8	0.1	4.8
REF. NO.	QR2001			QR2002						QR2003						QR2004		
MODE	E	C	B	1	2	3	4	5	6	1	2	3	4	5	6	E	C	B
STOP	3.6	3.6	0	0	2.8	0	0	0	0	0	2.8	0	0	0	0	2.8	0	3.3
PLAY	3.6	3.6	0	0	2.8	0	0	0	0	0	2.8	0	0	0	0	2.8	0	3.3
REC	3.6	3.6	0	0	2.8	0	0	0	0	0	2.8	0	0	0	0	2.8	0	3.3
F.F	3.6	3.6	0	0	2.8	0	0	0	0	0	2.8	0	0	0	0	2.8	0	3.3
REW	3.6	3.6	0	0	2.8	0	0	0	0	0	2.8	0	0	0	0	2.8	0	3.3
REF. NO.	QR2005			QR2006			QR2007			QR2008						QR2009		
MODE	E	C	B	E	C	B	E	C	B	1	2	3	4	5		E	C	B
STOP	2.8	0	2.8	2.8	—	2.8	0	0	0	2.3	0	1.8	0.1	0.1		2.8	0	2.8
PLAY	2.8	0	2.8	2.8	—	2.8	0	0	0	2.2	0	1.8	0.1	0.1		2.8	2.8	0
REC	2.8	0	2.8	2.8	2.7	0	0	0	0	2.3	0	1.8	0.1	0.1		2.8	0	2.8
F.F	2.8	0	2.8	2.8	—	2.8	0	0	0	2.2	0	1.8	0.1	0.1		2.8	2.8	0
REW	2.8	0	2.8	2.8	—	2.8	0	0	0	2.2	0	1.8	0.1	0.1		2.8	2.8	0
REF. NO.	QR2010			QR2011			QR2012			QR2013								
MODE	E	C	B	E	C	B	E	C	B	E	C	B						
STOP	2.8	2.8	0	0	0	3.3	0	1.5	1.0	0	1.0	1.7						
PLAY	2.8	0	2.8	0	0	3.3	0	1.5	1.0	0	1.0	1.7						
REC	2.8	2.8	0	0	0	3.3	0	1.5	1.0	0	1.0	1.7						
F.F	2.8	0	2.8	0	0	3.3	0	1.4	1.0	0	1.0	1.7						
REW	2.8	0	2.8	0	0	3.3	0	1.4	1.0	0	1.0	1.7						

3-21. VIDEO1 SCHEMATIC DIAGRAM


TO VTR MAIN CONNECTION (Page:3-52/H-17)
REF CLK
INH
INV
CS10
CS11
CS12
CS13
CS14
CS15
CS16
CS17
YS10
YS11
YS12
YS13
YS14
YS15
YS16
YS17
TDI CAM
CAM TDO
CAM CLK
ZEBRA
TO VTR MAIN CONNECTION (Page:3-52/E-16)
INF
CLK246
TO VTR MAIN CONNECTION (Page:3-52/G-16)
V PLL
FS PLL
TO VTR MAIN CONNECTION (Page:3-52/G-16)
WIDE
Y GCTL
C GCTL
CHR BLK
CLP RST
CHR Y
TO VTR MAIN CONNECTION (Page:3-52/E-17)
LCD Y
CR OUT
CB OUT
LCD HD
TO VTR MAIN CONNECTION (Page:3-52/E-17)
VBLK
TO VTR MAIN CONNECTION (Page:3-52/F-16)
DVC3V
REGD3V
REGD2V
REGA5V
A3V2
MEMORY3V
VOUT3V
TO VTR MAIN CONNECTION (Page:3-52/H-16)
FBV
Y OUT
FBY
V OUT
C OUT
A-LINE
C-SIGNAL
Y-SIGNAL
DVC 3V
V OUT 3V
REG D 2V
REG D 3V
N-LINE
IC3005
BH7086KV
(VCO)
MODE SELECT
VCXO
VCO
POWER SAVE
IC3006
NJM2538V
(VIDEO OUT)
BLOCK DIAGRAM :Page3-68
IC3004
BA7653AF
(INPUT SELECT)
LOGIC
Q3001
2SD2216
(AMP)
Q3002
2SD2216
(AMP)
QR3001
UN9212
(CLP RST :ON)
IC3001
T9P74EF
(DVIO)
(Digital Video In/Out)
DIGITAL Y IN
DIGITAL C IN
DIGITAL Y OUT
DIGITAL C OUT
SHUFFLE MEMORY DATA
IC3001-8 REC/PLAY
0.8Vp-p (20μsec/div.)
IC3001-18 REC/PLAY
0.5Vp-p (20μsec/div.)
IC3001-3 REC/PLAY
0.9Vp-p (20μsec/div.)
IC3001-13 REC/PLAY
0.6Vp-p (20μsec/div.)
IC3001-27 REC/PLAY
2.4Vp-p (20μsec/div.)
X3001
YSX0848
(27MHz)
LB3007
VLP0329A241
A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11

Back Page:
SYSTEM CTL & SERVO Section

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE


IC3007
LZ9FC144
(CHR AMP)
IC3002
MN47V07AF
(SHUFFLE MEMORY)
IC3003
MN67373
(CAS)
Compresion
Audio process
Shuffle
IC4501
AK4513
(AUDIO I/F)
BLOCK DIAGRAM
:Page 3-68
MEMORY 3V
REG D 3V
REG D 2V
A 3V 2
A-LINE
N-LINE
TO VTR MAIN CONNECTION
(Page:3-52/F-17)
(Page:3-52/H-17)
(Page:3-52/F-18)
(Page:3-52/E-16)
(Page:3-52/H-16)
(Page:3-52/E-16)
(Page:3-52/F-18)
(Page:3-52/F-16)
(Page:3-52/H-18)
12
13
14
15
16
17
18
19
20
21
22

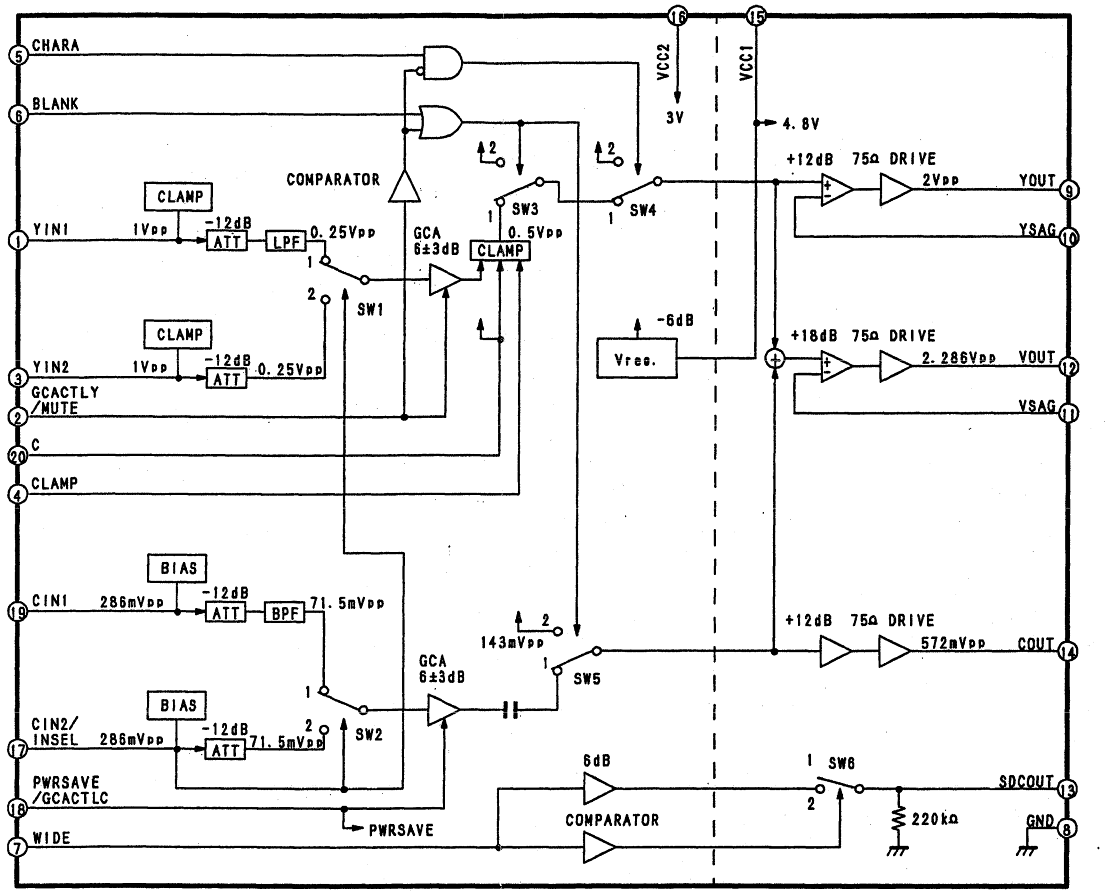
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERRING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( )ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART. (SP MODE)

VIDEO1 IC BLOCK

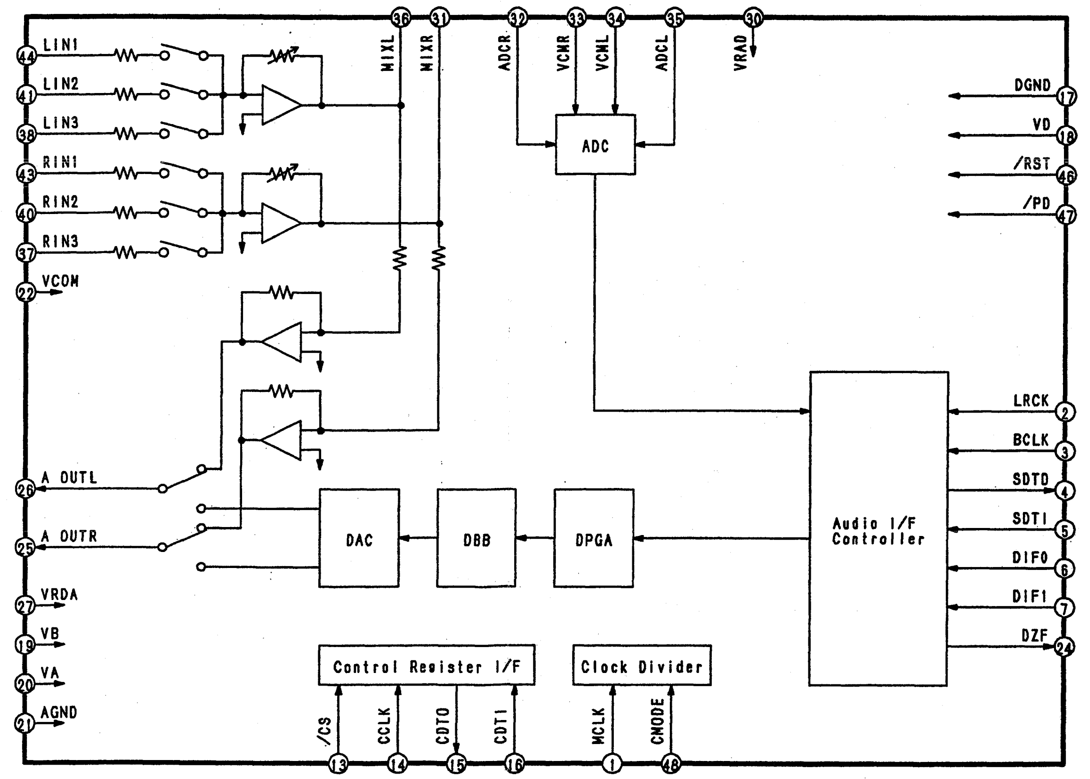
IC3006:NJM2538V

(SCHEMATIC DIAGRAM:Page 3-64/B-5)


CHARA
BLANK
VCC2
VCC1
3V
4.8V
COMPARATOR
CLAMP
YIN1
1Vpp
-12dB
ATT
LPF
0.25Vpp
GCA 6±3dB
CLAMP
0.5Vpp
SW1
SW3
SW4
+12dB 75Ω DRIVE
2Vpp
YOUT
YSAG
YIN2
0.25Vpp
GCACTLY /MUTE
C
-6dB
Vreg.
+18dB 75Ω DRIVE
2.286Vpp
VSAG
BIAS
CIN1
286mVpp
BPF
71.5mVpp
143mVpp
SW5
+12dB 75Ω DRIVE
572mVpp
COUT
CIN2/ INSEL
SW2
PWRSAVE /GCACTLC
PWRSAVE
6dB
SW6
SDCOUT
220kΩ
GND
WIDE

IC4501:AK4513

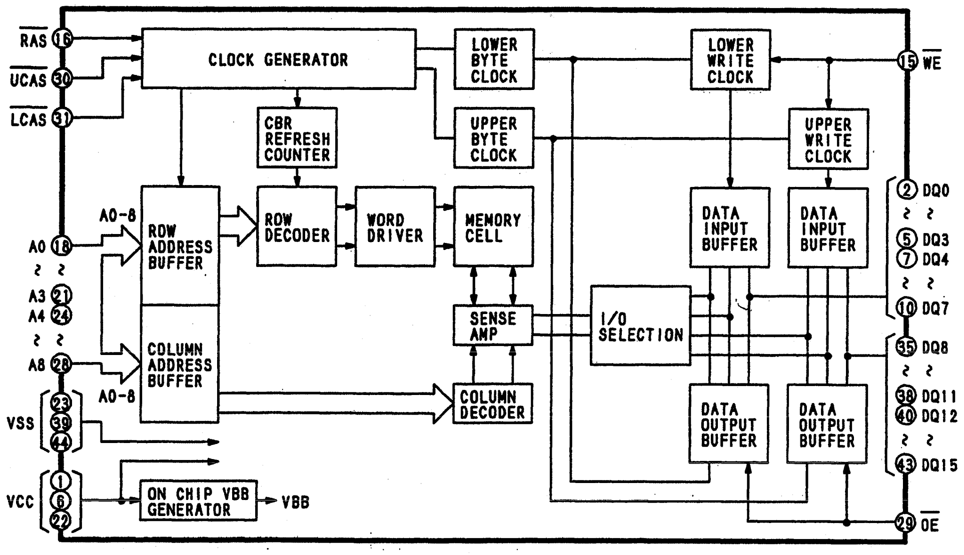
(SCHEMATIC DIAGRAM:Page 3-67/B-19)


LIN1
LIN2
LIN3
RIN1
RIN2
RIN3
VCOM
MIXL
MIXR
ADCR
VCMR
VCML
ADCL
VRAD
ADC
DGND
VD
/RST
/PD
A OUTL
A OUTR
VRDA
VB
VA
AGND
DAC
DBB
DPGA
Audio I/F Controller
LRCK
BCLK
SDTO
SDTI
DIF0
DIF1
DZF
Control Resister I/F
Clock Divider
/CS
CCLK
CDTO
CDTI
MCLK
CMODE

VIDEO2 IC BLOCK

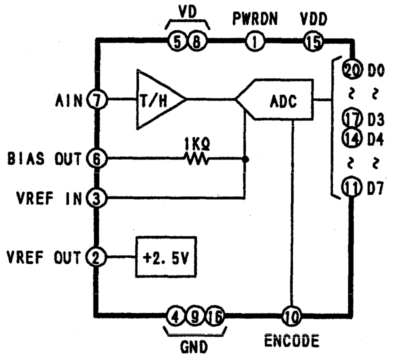
IC3202:MNV4260

(SCHEMATIC DIAGRAM:Page 3-70/A-3)


RAS
UCAS
LCAS
CLOCK GENERATOR
LOWER BYTE CLOCK
UPPER BYTE CLOCK
LOWER WRITE CLOCK
UPPER WRITE CLOCK
WE
CBR REFRESH COUNTER
A0-8
A0
A3
A4
A8
ROW ADDRESS BUFFER
ROW DECODER
WORD DRIVER
MEMORY CELL
COLUMN ADDRESS BUFFER
SENSE AMP
I/O SELECTION
COLUMN DECODER
DATA INPUT BUFFER
DATA OUTPUT BUFFER
DQ0
DQ3
DQ4
DQ7
DQ8
DQ11
DQ12
DQ15
VSS
VCC
ON CHIP VBB GENERATOR
VBB
OE

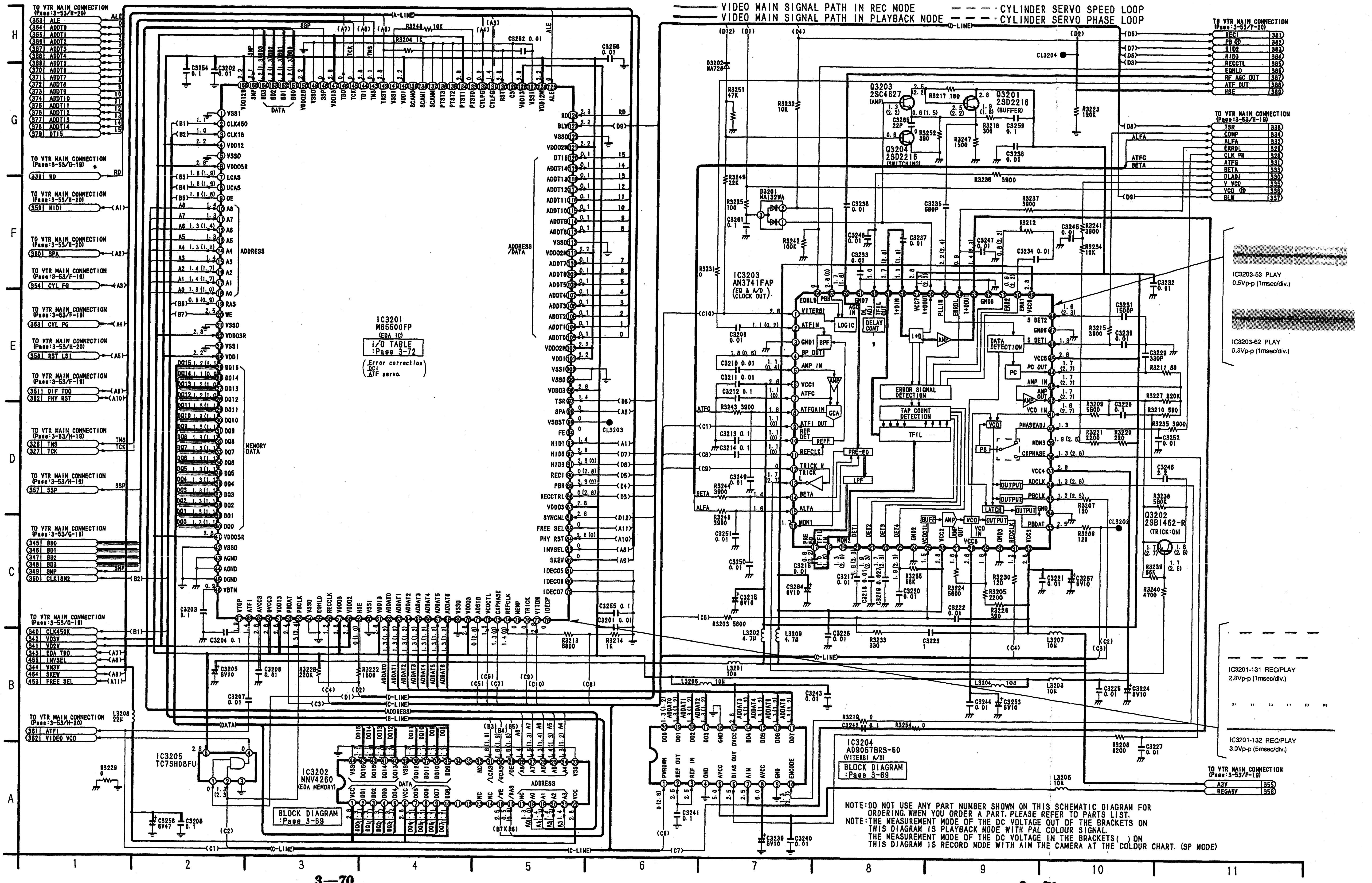
IC3204:AD9057BRS-60

(SCHEMATIC DIAGRAM:Page 3-71/A-8)


VD
PWRDN
VDD
AIN
T/H
ADC
1KΩ
BIAS OUT
VREF IN
VREF OUT
+2.5V
D0
D3
D4
D7
GND
ENCODE

Back Page:
VIDEO1 Section

3-22. VIDEO2 SCHEMATIC DIAGRAM



VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
TO VTR MAIN CONNECTION (Page:3-53/H-20)
TO VTR MAIN CONNECTION (Page:3-53/G-19)
TO VTR MAIN CONNECTION (Page:3-53/F-19)
TO VTR MAIN CONNECTION (Page:3-53/H-19)
TO VTR MAIN CONNECTION (Page:3-53/F-20)
IC3201 M65500FP (EDA IC)
I/O TABLE :Page 3-72
Error correction DCI ATF servo.
IC3202 MNV4260 (EDA MEMORY)
BLOCK DIAGRAM :Page 3-69
IC3203 AN3741FAP (ED & A/D CLOCK OUT)
IC3204 AD9057BRS-60 (VITERBI A/D)
BLOCK DIAGRAM :Page 3-69
IC3205 TC7SH08FU
Q3201 2SD2216 (BUFFER)
Q3202 2SB1462-R (TRICK:ON)
Q3203 2SC4627 (AMP)
Q3204 2SD2216 (SWITCHING)
D3201 MA132WA
D3202 MA728
ADDRESS
MEMORY DATA
ADDRESS /DATA
DATA
A-LINE
B-LINE
C-LINE
D-LINE
IC3203-53 PLAY 0.5Vp-p (1msec/div.)
IC3203-62 PLAY 0.3Vp-p (1msec/div.)
IC3201-131 REC/PLAY 2.8Vp-p (1msec/div.)
IC3201-132 REC/PLAY 3.0Vp-p (5msec/div.)
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLDUR CHART. (SP MODE)

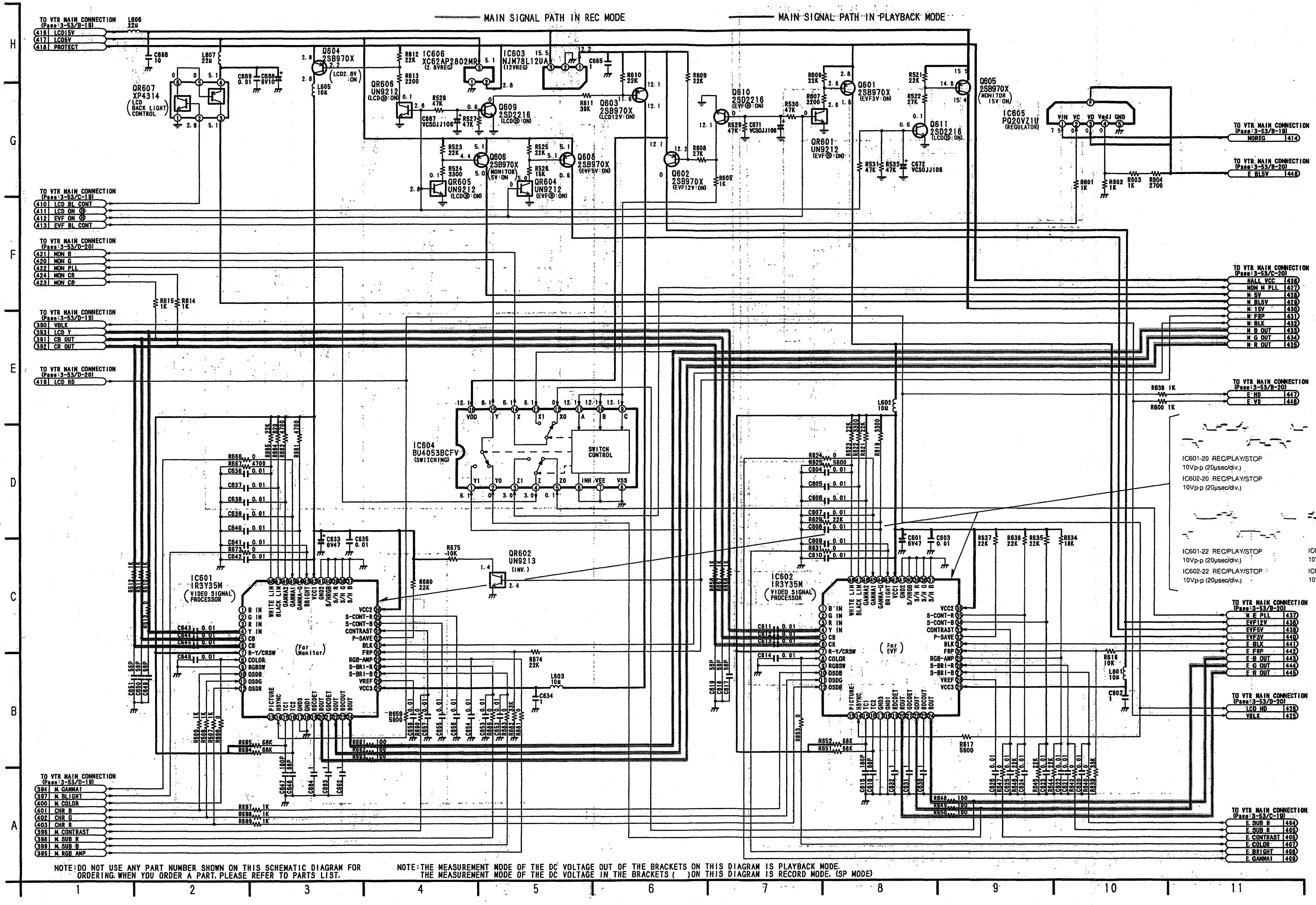
VIDEO 2 I/O TABLE

IC3201 (M65500FP): EDA

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	VSSI	—	VSS for Input Buffer & Inside Logic
2	CLK450	I	Clock
3	CLK18	I	Clock
4	VDD12	—	VDD (2V) for Input & Inside Logic
5	VSSO	—	VSS (Output Buffer)
6	VDDO3R	—	VDD (Output Buffer)
7	LCAS	O	2/3V Select Correspond (DRAM I/F)
8	UCAS	O	2/3V Select Correspond (DRAM I/F)
9	OE	O	2/3V Select Correspond (DRAM I/F)
10	A8	O	2/3V Select Correspond (DRAM I/F)
11	A7	O	2/3V Select Correspond (DRAM I/F)
12	A6	O	2/3V Select Correspond (DRAM I/F)
13	A5	O	2/3V Select Correspond (DRAM I/F)
14	A4	O	2/3V Select Correspond (DRAM I/F)
15	A3	O	2/3V Select Correspond (DRAM I/F)
16	A2	O	2/3V Select Correspond (DRAM I/F)
17	A1	O	2/3V Select Correspond (DRAM I/F)
18	A0	O	2/3V Select Correspond (DRAM I/F)
19	RAS	O	2/3V Select Correspond (DRAM I/F)
20	WE	O	2/3V Select Correspond (DRAM I/F)
21	VSSO	—	VSS for Output Buffer
22	VDDO3R	—	VDD for Output Buffer (DRAM I/F: 2/3V Select Correspond)
23	VSSI	—	VSS for Input Buffer & Inside Logic
24	VDDI	—	VDD (2V) for Input & Inside Logic
25	DQ15	I/O	2/3V Select Correspond (DRAM I/F)
26	DQ14	I/O	2/3V Select Correspond (DRAM I/F)
27	DQ13	I/O	2/3V Select Correspond (DRAM I/F)
28	DQ12	I/O	2/3V Select Correspond (DRAM I/F)
29	DQ11	I/O	2/3V Select Correspond (DRAM I/F)
30	DQ10	I/O	2/3V Select Correspond (DRAM I/F)
31	DQ9	I/O	2/3V Select Correspond (DRAM I/F)
32	DQ8	I/O	2/3V Select Correspond (DRAM I/F)
33	DQ7	I/O	2/3V Select Correspond (DRAM I/F)
34	DQ6	I/O	2/3V Select Correspond (DRAM I/F)
35	DQ5	I/O	2/3V Select Correspond (DRAM I/F)
36	DQ4	I/O	2/3V Select Correspond (DRAM I/F)
37	DQ3	I/O	2/3V Select Correspond (DRAM I/F)
38	DQ2	I/O	2/3V Select Correspond (DRAM I/F)
39	DQ1	I/O	2/3V Select Correspond (DRAM I/F)
40	DQ0	I/O	2/3V Select Correspond (DRAM I/F)
41	VDDR3R	—	VDD for Output Buffer (DRAM I/F: 2/3V Select Correspond)
42	VSSO	—	VSS for Output Buffer
43	AGND	—	Analogue GND
44	AGND	—	Analogue GND
45	DGND	—	Digital GND
46	VBTM	—	Reference Analogue Voltage (BOTTOM)
47	VTOP	—	Reference Analogue Voltage (TOP)
48	ATFI	I	Analogue Input (Vin: 1.0Vp-p)
49	AVCC3	—	Analogue VCC
50	DVCC3	—	Digital VCC
51	VDDI3	—	VDD (3V) for Low Amplitude Buffer
52	PBDAT	I	Low Amplitude Buffer
53	PBCLK	I	Low Amplitude Buffer
54	VSSO	—	VSS for Low Amplitude
55	EQHLD	I	Low Amplitude Buffer
56	RECCLK	I	Low Amplitude Buffer
57	VDDO3	—	VDD (3V) for Output Buffer
58	VDDO2	—	VDD (2V) for Output Buffer
59	HSE	O	
60	VSSI	—	VSS for Input Buffer & Inside Logic
61	VDDI3	—	VDD (3V) for Input Buffer
62	ADDAT0	I	Address Data
63	ADDAT1	I	Address Data
64	ADDAT2	I	Address Data
65	ADDAT3	I	Address Data
66	ADDAT4	I	Address Data
67	ADDAT5	I	Address Data
68	ADDAT6	I	Address Data
69	VSSO	—	(N.C.)
70	VDDO3	—	(N.C.)
71	ADSTB	O	AD STB
72	VCOCTL	O	VCO CTL
73	CKPHASE	O	PHASE Clock
74	REFCLK	O	Reference Clock
75	MEMP	—	(N.C.)
76	TRICK	O	Tracking Clock
77	VITON	O	VIT ON
78	IDECP	—	(N.C.)
79	IDECO7	—	GND
80	IDECO6	—	GND
81	IDECO5	—	GND
82	SKEW	I	SKEW
83	INVSEL	O	INV SEL
84	RHYRST	I/O	PHY RST
85	FREESEL	O	FREE SEL
86	SYNCNL	I	SYNC NL
87	VDDO3	—	VDD (3V) for Output Buffer
88	RECCTRL	O	REC Control
89	PBH	O	Play Back Ⓗ Signal
90	RECI	O	RECI
91	HID3	O	Head Switching Pulse
92	HID2	O	Head Switching Pulse
93	HID1	O	Head Switching Pulse
94	FE	—	(N.C.)
95	VSBST	O	VS BST
96	SPA	O	ATF Sampling Pulse
97	TSR	O	Head Switching Reference
98	VDDO3	—	VDD (3V) for Output Buffer
99	VSSO	—	VSS for Output Buffer
100	VSSI	—	VSS for Input Buffer & Inside Logic
101	VDDI	—	VDD (2V) for Input & Inside Logic
102	VDDO2M	—	VDD for Output Buffer (MCU I/F: 2/3V Select Correspond)
103	ADDAT0	I/O	2/3V Select Correspond (MCU I/F)
104	ADDAT1	I/O	2/3V Select Correspond (MCU I/F)
105	ADDAT2	I/O	2/3V Select Correspond (MCU I/F)
106	ADDAT3	I/O	2/3V Select Correspond (MCU I/F)
107	ADDAT4	I/O	2/3V Select Correspond (MCU I/F)
108	ADDAT5	I/O	2/3V Select Correspond (MCU I/F)
109	ADDAT6	I/O	2/3V Select Correspond (MCU I/F)
110	ADDAT7	I/O	2/3V Select Correspond (MCU I/F)
111	VDDO2M	—	VDD for Output Buffer (MCU I/F: 2/3V Select Correspond)
112	VSSO	—	VSS for Output Buffer
113	ADDT8	I/O	2/3V Select Correspond (MCU I/F)
114	ADDT9	I/O	2/3V Select Correspond (MCU I/F)
115	ADDT10	I/O	2/3V Select Correspond (MCU I/F)
116	ADDT11	I/O	2/3V Select Correspond (MCU I/F)
117	ADDT12	I/O	2/3V Select Correspond (MCU I/F)
118	ADDT13	I/O	2/3V Select Correspond (MCU I/F)
119	ADDT14	I/O	2/3V Select Correspond (MCU I/F)
120	DT15	I/O	2/3V Select Correspond (MCU I/F)
121	VDDO2M	—	VDD for Output Buffer (MCU I/F: 2/3V Select Correspond)
122	VSSO	—	VSS for Output Buffer
123	BLW	I	2/3V Select Correspond (MCU I/F)
124	RD	I	2/3V Select Correspond (MCU I/F)
125	ALE	I	2/3V Select Correspond (MCU I/F)
126	VDDI2M	—	VDD for Input Buffer (MCU I/F: 2/3V Select Correspond)
127	VSSI	—	VSS for Input Buffer & Inside Logic
128	VDDI3	—	VDD (3V) for Input Buffer
129	CS	—	GND
130	RST	I	Reset
131	CYLFG	I	Cylinder FG
132	CYLPG	I	Cylinder PG
133	PTST0	I	IC-Test Control
134	PTST1	I	IC-Test Control
135	PTST2	—	GND
136	PTST3	—	GND
137	SCANM	—	GND
138	SCANI	—	GND
139	SCANO	—	(N.C.)
140	VDDI	—	VDD (2V) for Input & Inside Logic
141	VSSI	—	VSS for Input Buffer & Inside Logic
142	TRST	I	BSCAN Reset Input
143	TMS	I	BSCAN Mode Input
144	TDI	I	BSCAN Data Input
145	TCK	I	BSCAN Clock Input
146	TDO	O	BSCAN Data Output
147	VDDI3	—	VDD (3V) for Input Buffer
148	SSP	I	SSP
149	VSSO	—	VSS for Output Buffer
150	VSDDO2B	—	VDD for Output Buffer (DVC BUS: 2/3V Select Correspond)
151	BD0	I/O	2/3V Select Correspond (DVC BUS I/F)
152	BD1	I/O	2/3V Select Correspond (DVC BUS I/F)
153	BD2	I/O	2/3V Select Correspond (DVC BUS I/F)
154	BD3	I/O	2/3V Select Correspond (DVC BUS I/F)
155	SMP	I/O	2/3V Select Correspond (DVC BUS I/F)
156	VDDI2B	—	VDD for Input Buffer (DVC BUS: 2/3V Select Correspond)

Back Page:
VIDEO2 Section

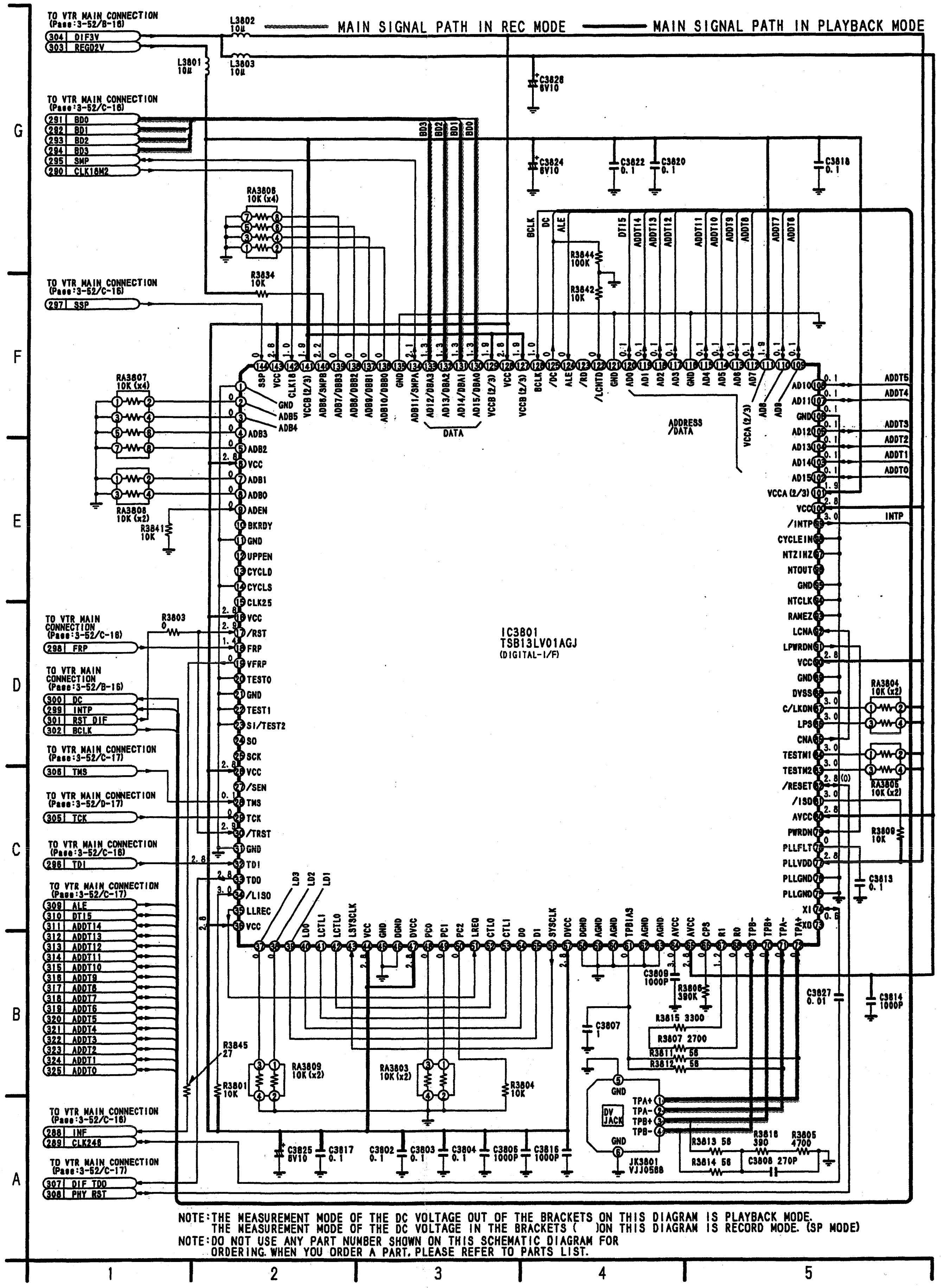
3-23. LCD SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
TO VTR MAIN CONNECTION (Page:3-53/B-19)
416 LCD15V
417 LCD5V
418 PROTECT
L606 22µ
Q604 2SB970X
IC606 XC62AP2802MR (2.8VREG)
IC603 NJM78L12UA (12VREG)
Q610 2SD2216 (EVF ON)
Q601 2SB970X (EVF3V ON)
Q605 2SB970X (MONITOR 15V ON)
IC605 PQ20VZ1U (REGULATOR)
QR607 XP4314 (LCD BACK LIGHT CONTROL)
QR606 UN9212
Q609 2SD2216 (LCD ON)
Q603 2SB970X (LCD12V ON)
Q602 2SB970X (EVF12V ON)
QR601 UN9212
Q611 2SD2216 (LCD ON)
Q606 2SB970X (MONITOR 5V ON)
Q608 2SB970X (EVF5V ON)
QR605 UN9212
QR604 UN9212
TO VTR MAIN CONNECTION (Page:3-53/C-19)
410 LCD BL CONT
411 LCD ON
412 EVF ON
413 EVF BL CONT
TO VTR MAIN CONNECTION (Page:3-53/D-20)
421 MON B
420 MON G
422 MON PLL
424 MON CR
423 MON CB
TO VTR MAIN CONNECTION (Page:3-53/D-19)
390 VBLK
393 LCD Y
391 CB OUT
392 CR OUT
TO VTR MAIN CONNECTION (Page:3-53/D-20)
419 LCD HD
IC604 BU4053BCFV (SWITCHING)
SWITCH CONTROL
QR602 UN9213 (INV.)
IC601 IR3Y35M (VIDEO SIGNAL PROCESSOR)
(For Monitor)
IC602 IR3Y35M (VIDEO SIGNAL PROCESSOR)
(For EVF)
TO VTR MAIN CONNECTION (Page:3-53/B-19)
NOREG 414
TO VTR MAIN CONNECTION (Page:3-53/B-20)
E BL5V 446
TO VTR MAIN CONNECTION (Page:3-53/C-20)
HALL VCC 436
MON M PLL 427
M 5V 428
M BL5V 429
M 15V 430
M FRP 431
M BLK 432
M B OUT 433
M G OUT 434
M R OUT 435
TO VTR MAIN CONNECTION (Page:3-53/B-20)
E HD 447
E VD 448
IC601-20 REC/PLAY/STOP 10Vp-p (20µsec/div.)
IC602-20 REC/PLAY/STOP 10Vp-p (20µsec/div.)
IC601-22 REC/PLAY/STOP 10Vp-p (20µsec/div.)
IC602-22 REC/PLAY/STOP 10Vp-p (20µsec/div.)
IC601-24 REC/PLAY/STOP 10Vp-p (20µsec/div.)
IC602-24 REC/PLAY/STOP 10Vp-p (20µsec/div.)
TO VTR MAIN CONNECTION (Page:3-53/B-20)
M E PLL 437
EVF12V 438
EVF5V 439
EVF3V 440
E BLK 441
E FRP 442
E B OUT 443
E G OUT 444
E R OUT 445
TO VTR MAIN CONNECTION (Page:3-53/D-20)
LCD HD 426
VBLK 425
TO VTR MAIN CONNECTION (Page:3-53/D-19)
384 M GAMMA1
397 M BLIGHT
400 M COLOR
401 CHR B
402 CHR G
403 CHR R
396 M CONTRAST
398 M SUB R
399 M SUB B
395 M RGB AMP
TO VTR MAIN CONNECTION (Page:3-53/C-19)
E SUB B 404
E SUB R 405
E CONTRAST 406
E COLOR 407
E BRIGHT 408
E GAMMA1 409
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

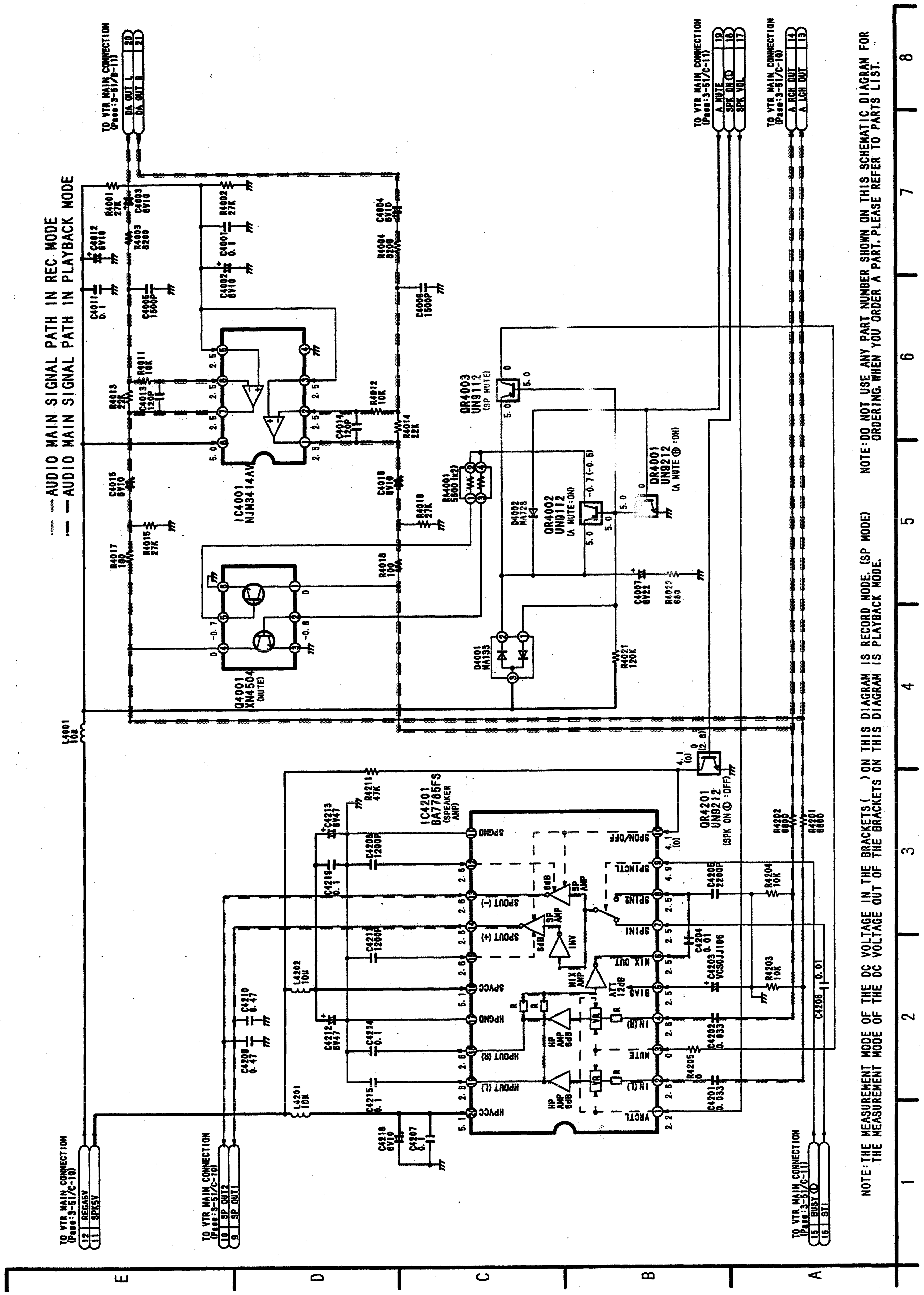
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)

3-24. DIGITAL I/F SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
TO VTR MAIN CONNECTION
IC3801
TSB13LV01AGJ
(DIGITAL-I/F)
ADDRESS /DATA
DATA
DV JACK
JK3801 VJJ0588
1
2
3
4
5
A
B
C
D
E
F
G

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( )ON THIS DIAGRAM IS RECORD MODE. (SP MODE)
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-25. AUDIO SCHEMATIC DIAGRAM

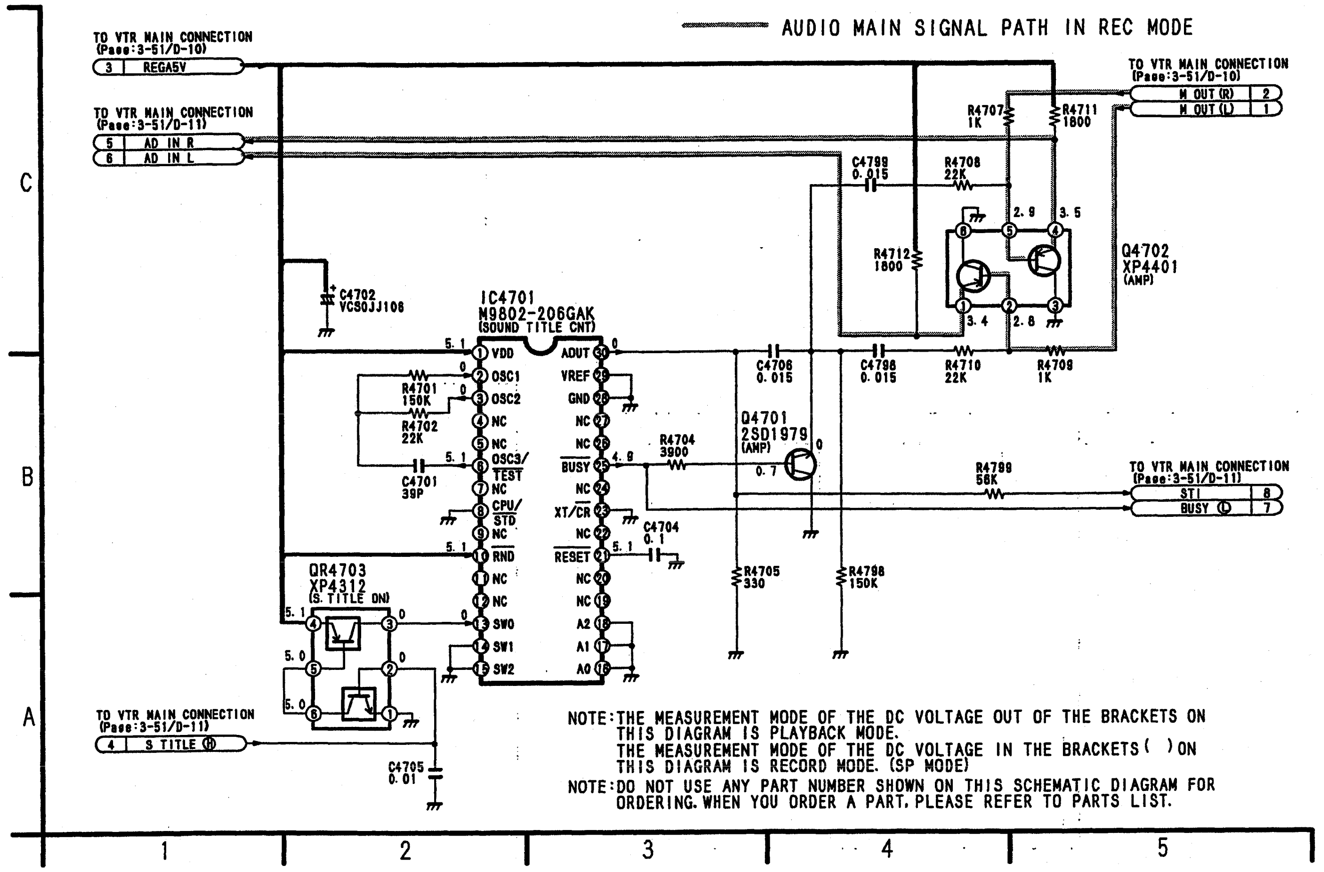

AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE
TO VTR MAIN CONNECTION
DA OUT L
DA OUT R
A MUTE
SPK ON
SPK VOL
A RCH OUT
A LCH OUT
IC4001
NJM3414AV
Q4001
XN4504
(MUTE)
QR4003
UN9112
QR4002
UN9112
QR4001
UN9212
D4001
MA133
D4002
MA728
IC4201
BA7785FS
(SPEAKER AMP)
QR4201
UN9212
REG45V
BP45V
SP OUT2
SP OUT1
BUSY
ST1
A
B
C
D
E
1
2
3
4
5
6
7
8

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

Back Page:
LCD Section

3-26. SOUND TITLE SCHEMATIC DIAGRAM


AUDIO MAIN SIGNAL PATH IN REC MODE
TO VTR MAIN CONNECTION (Page:3-51/D-10)
3 REGA5V
TO VTR MAIN CONNECTION (Page:3-51/D-11)
5 AD IN R
6 AD IN L
TO VTR MAIN CONNECTION (Page:3-51/D-10)
2 N OUT (R)
1 N OUT (L)
R4707 1K
R4711 1800
C4799 0.015
R4708 22K
R4712 1800
Q4702 XP4401 (AMP)
C4702 VC50J106
IC4701 M9802-206GAK (SOUND TITLE CNT)
R4701 150K
R4702 22K
C4701 39P
C4706 0.015
C4798 0.015
R4710 22K
R4709 1K
Q4701 2SD1979 (AMP)
R4704 3900
R4799 56K
TO VTR MAIN CONNECTION (Page:3-51/D-11)
STI 8
BUSY 7
C4704 0.1
R4705 330
R4798 150K
QR4703 XP4312 (S.TITLE ON)
TO VTR MAIN CONNECTION (Page:3-51/D-11)
4 S TITLE
C4705 0.01
C
B
A
1
2
3
4
5

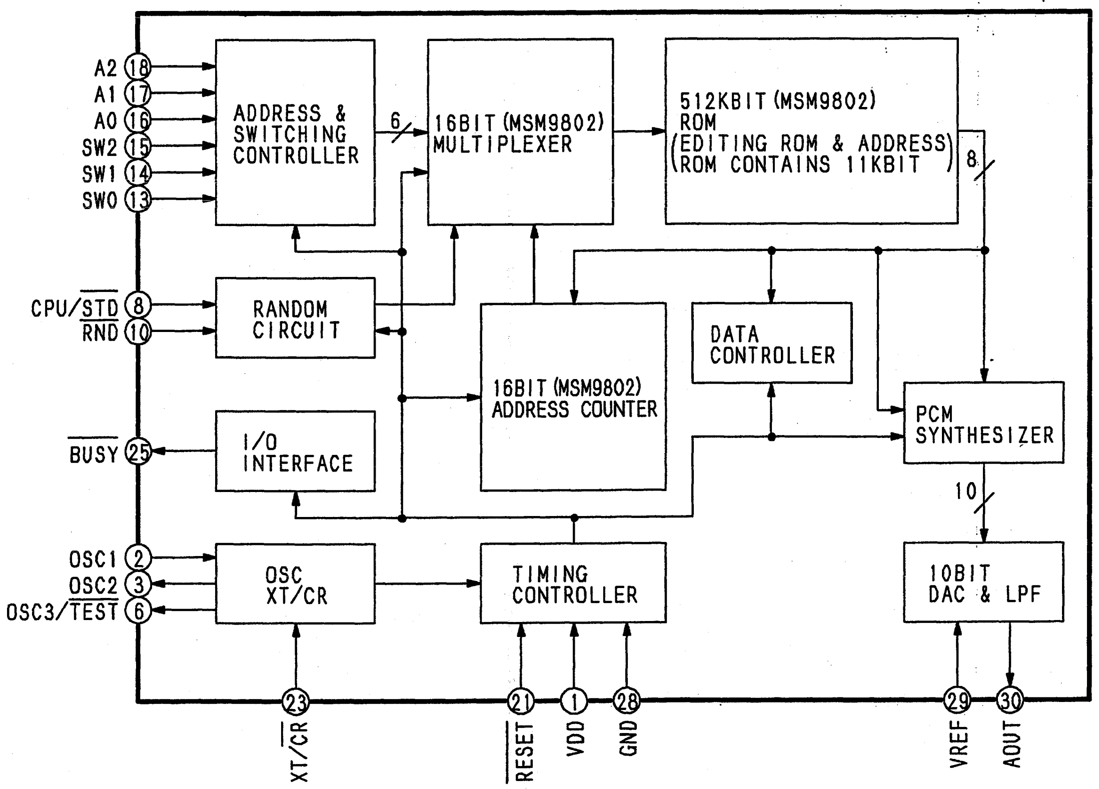
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

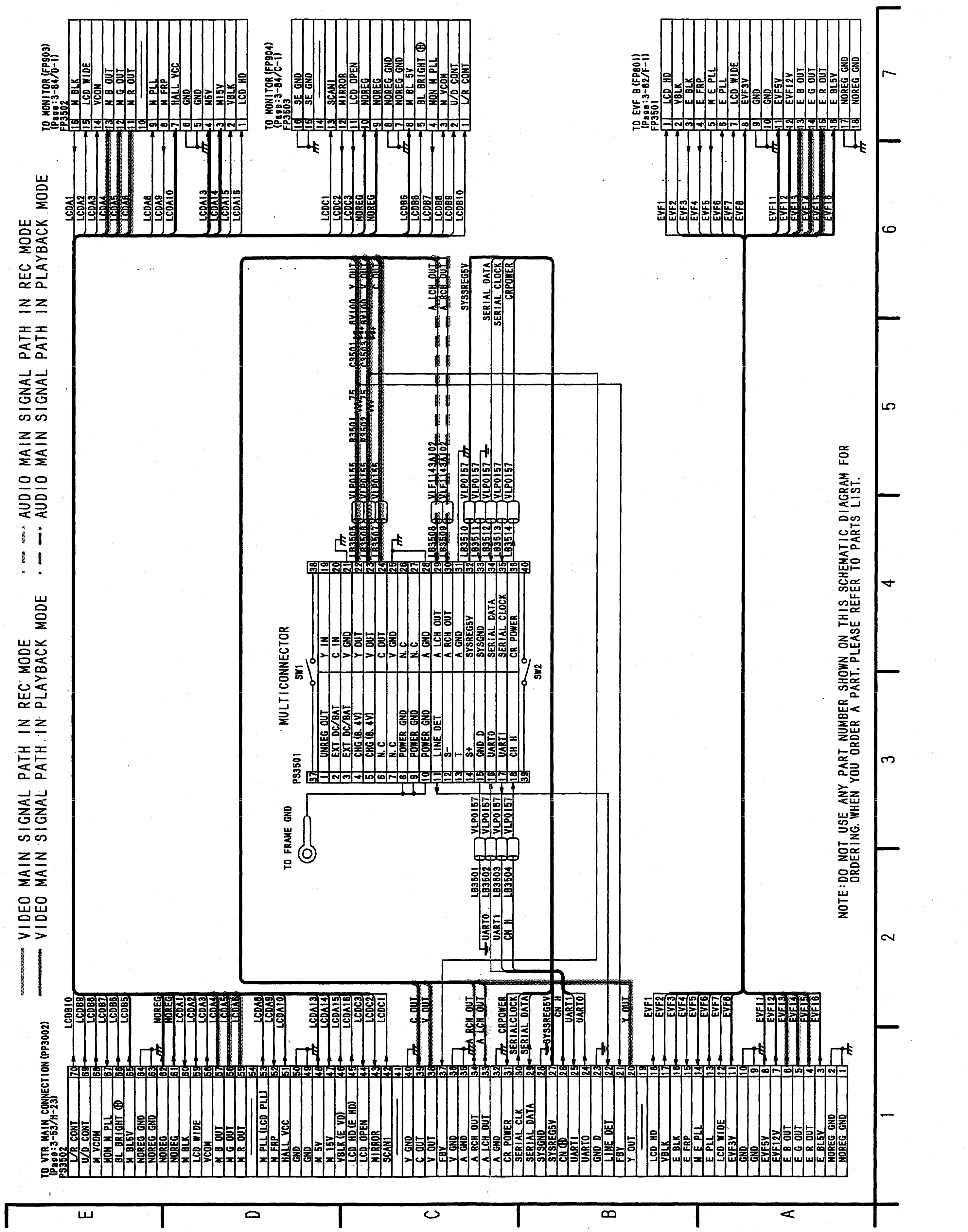
SOUND TITLE IC BLOCK

IC4701:M9802-206GAK

(SCHEMATIC DIAGRAM:Page 3-78/B-2)

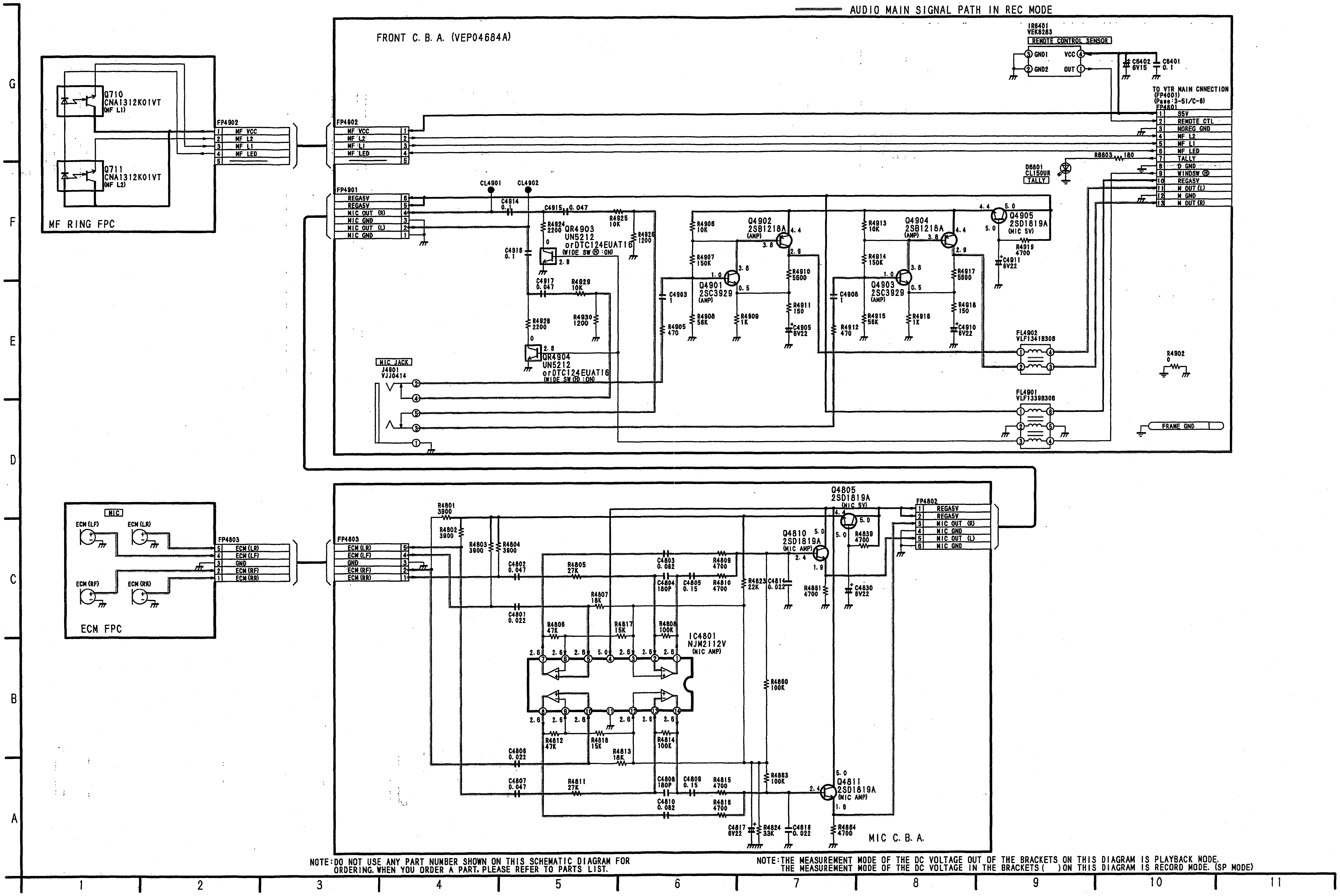

A2 18
A1 17
A0 16
SW2 15
SW1 14
SW0 13
ADDRESS & SWITCHING CONTROLLER
6
16BIT (MSM9802) MULTIPLEXER
512KBIT (MSM9802) ROM (EDITING ROM & ADDRESS) (ROM CONTAINS 11KBIT)
8
CPU/STD 8
RND 10
RANDOM CIRCUIT
DATA CONTROLLER
16BIT (MSM9802) ADDRESS COUNTER
PCM SYNTHESIZER
BUSY 25
I/O INTERFACE
10
OSC1 2
OSC2 3
OSC3/TEST 6
OSC XT/CR
TIMING CONTROLLER
10BIT DAC & LPF
23 XT/CR
21 RESET
1 VDD
28 GND
29 VREF
30 AOUT

3-27. LCD I/F SCHEMATIC DIAGRAM


TO MONITOR (FP903) (Page:3-84/D-1) FP3502
TO MONITOR (FP904) (Page:3-84/C-1) FP3503
TO EVF B (FP801) (Page:3-82/F-1) FP3501
VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE
MULTICONNECTOR
P3501
SW1
SW2
TO FRAME GND
TO VTR MAIN CONNECTION (FP3002) (Page:3-53/H-23) P3502
E
D
C
B
A
1
2
3
4
5
6
7

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

3-28. FRONT & MF RING SCHEMATIC DIAGRAM

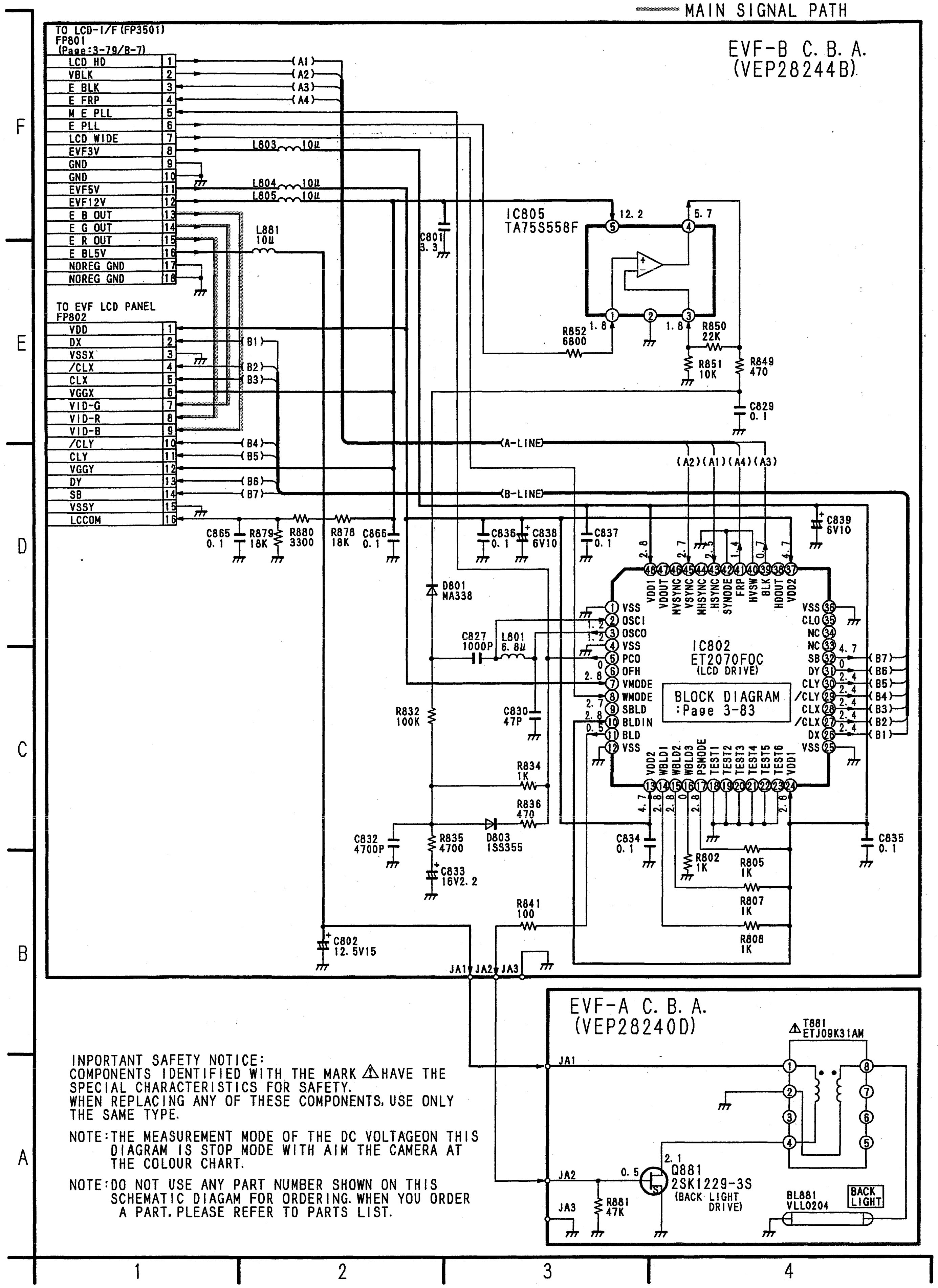

AUDIO MAIN SIGNAL PATH IN REC MODE
FRONT C. B. A. (VEP04684A)
MF RING FPC
Q710 CNA1312K01VT (MF L1)
Q711 CNA1312K01VT (MF L2)
FP4902
MF VCC
MF L2
MF L1
MF LED
FP4901
REGA5V
MIC OUT (R)
MIC GND
MIC OUT (L)
IR6401 VEK8283
REMOTE CONTROL SENSOR
GND1
GND2
VCC
OUT
C6402 6V15
C6401 0.1
TO VTR MAIN CNNECTION (FP4001) (Page:3-51/C-8)
FP4801
S5V
REMOTE CTL
NOREG GND
MF L2
MF L1
MF LED
TALLY
D GND
WINDSW (H)
REGA5V
M OUT (L)
M GND
M OUT (R)
R6803 180
D6801 CL150UR
TALLY
CL4901
CL4902
C4914 0.1
C4915 0.047
R4925 10K
R4926 1200
R4924 2200
QR4903 UN5212 orDTC124EUAT16 (WIDE SW (H):ON)
C4916 0.1
C4917 0.047
R4929 10K
R4930 1200
R4928 2200
QR4904 UN5212 orDTC124EUAT16 (WIDE SW (H):ON)
MIC JACK
J4901 VJJ0414
R4906 10K
R4907 150K
Q4902 2SB1218A (AMP)
Q4901 2SC3929 (AMP)
R4910 5600
R4911 150
C4905 6V22
C4903 1
R4905 470
R4908 56K
R4909 1K
R4913 10K
R4914 150K
Q4904 2SB1218A (AMP)
Q4903 2SC3929 (AMP)
R4917 5600
R4918 150
C4910 6V22
C4906 1
R4912 470
R4915 56K
R4916 1K
Q4905 2SD1819A (MIC 5V)
R4919 4700
C4911 6V22
FL4902 VLF13418308
FL4901 VLF13398308
R4902 0
FRAME GND
ECM FPC
MIC
ECM (LF)
ECM (LR)
ECM (RF)
ECM (RR)
FP4803
ECM (LR)
ECM (LF)
GND
ECM (RF)
ECM (RR)
R4801 3900
R4802 3900
R4803 3900
R4804 3900
C4802 0.047
R4805 27K
C4801 0.022
R4807 18K
C4803 0.082
C4804 180P
C4805 0.15
R4809 4700
R4810 4700
R4823 22K
C4814 0.022
R4806 47K
R4817 15K
R4808 100K
IC4801 NJM2112V (MIC AMP)
R4812 47K
R4818 15K
R4813 18K
R4814 100K
C4806 0.022
C4807 0.047
R4811 27K
C4808 180P
C4809 0.15
R4815 4700
C4810 0.082
R4816 4700
C4817 6V22
R4824 33K
C4818 0.022
Q4805 2SD1819A (MIC 5V)
R4839 4700
Q4810 2SD1819A (MIC AMP)
R4861 4700
C4830 6V22
R4860 100K
R4863 100K
Q4811 2SD1819A (MIC AMP)
R4864 4700
FP4802
REGA5V
MIC OUT (R)
MIC GND
MIC OUT (L)
MIC C. B. A.
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)

Back Page: SOUND TITLE & LCD I/F Section

3-29. E.V.F. (A) & E.V.F. (B) SCHEMATIC DIAGRAM


MAIN SIGNAL PATH
EVF-B C. B. A.
(VEP28244B)
TO LCD-I/F (FP3501)
FP801
(Page:3-79/B-7)
LCD HD
VBLK
E BLK
E FRP
M E PLL
E PLL
LCD WIDE
EVF3V
GND
GND
EVF5V
EVF12V
E B OUT
E G OUT
E R OUT
E BL5V
NOREG GND
NOREG GND
TO EVF LCD PANEL
FP802
VDD
DX
VSSX
/CLX
CLX
VGGX
VID-G
VID-R
VID-B
/CLY
CLY
VGGY
DY
SB
VSSY
LCCOM
L803 10μ
L804 10μ
L805 10μ
L881 10μ
C801 3.3
IC805
TA75S558F
R852 6800
R850 22K
R851 10K
R849 470
C829 0.1
A-LINE
B-LINE
C865 0.1
R879 18K
R880 3300
R878 18K
C866 0.1
C836 0.1
C838 6V10
C837 0.1
C839 6V10
D801 MA338
C827 1000P
L801 6.8μ
IC802
ET2070FOC
(LCD DRIVE)
BLOCK DIAGRAM
:Page 3-83
R832 100K
C830 47P
R834 1K
R836 470
C832 4700P
R835 4700
D803 1SS355
C833 16V2.2
C834 0.1
R802 1K
R805 1K
R807 1K
R808 1K
C835 0.1
R841 100
C802 12.5V15
JA1
JA2
JA3
EVF-A C. B. A.
(VEP28240D)
T881
ETJ09K31AM
Q881
2SK1229-3S
(BACK LIGHT DRIVE)
R881 47K
BL881
VLL0204
BACK LIGHT
F
E
D
C
B
A
1
2
3
4

INPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

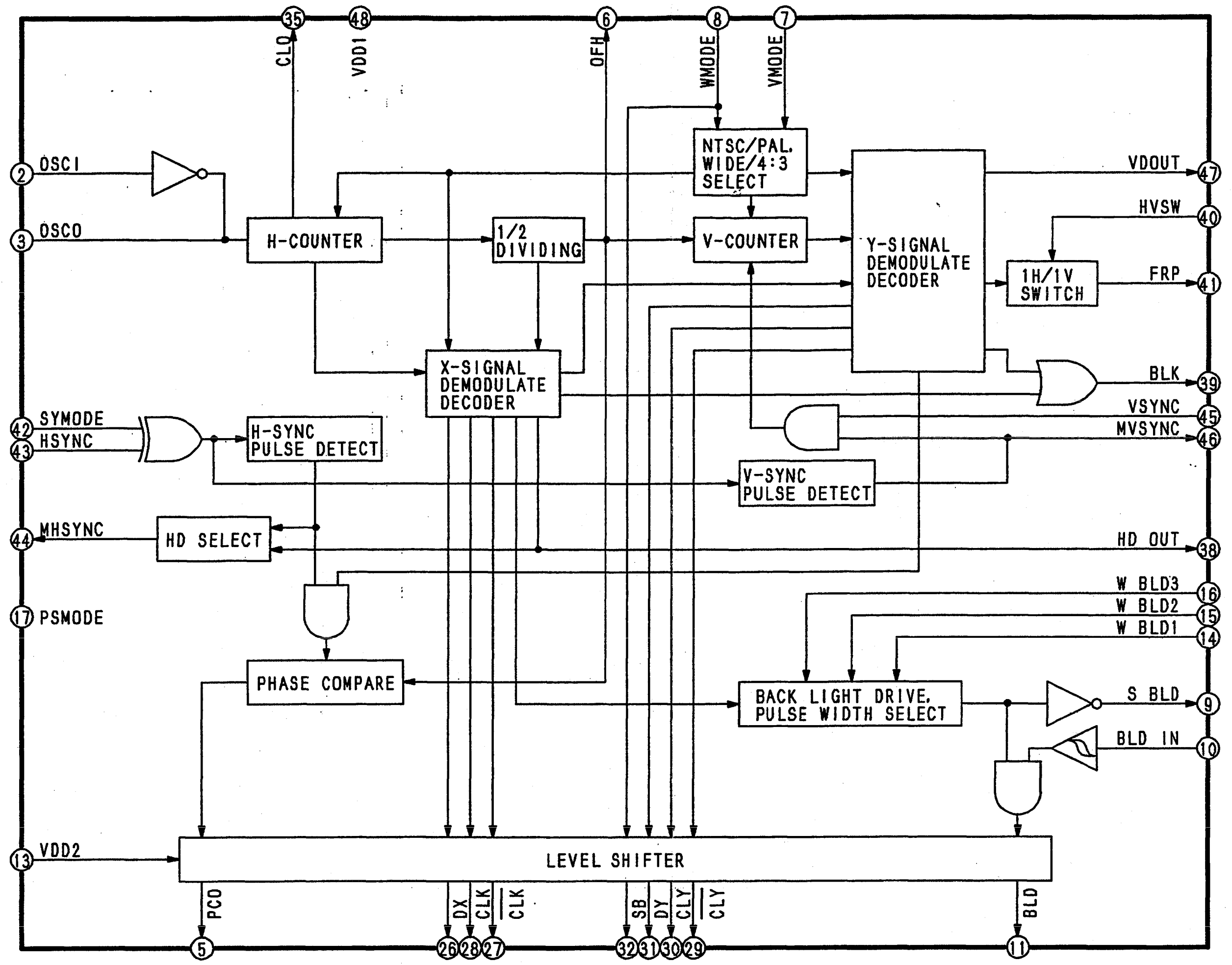
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGEON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE COLOUR CHART.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGAM FOR ORDERING. WHEN YOU ORDER A PART. PLEASE REFER TO PARTS LIST.

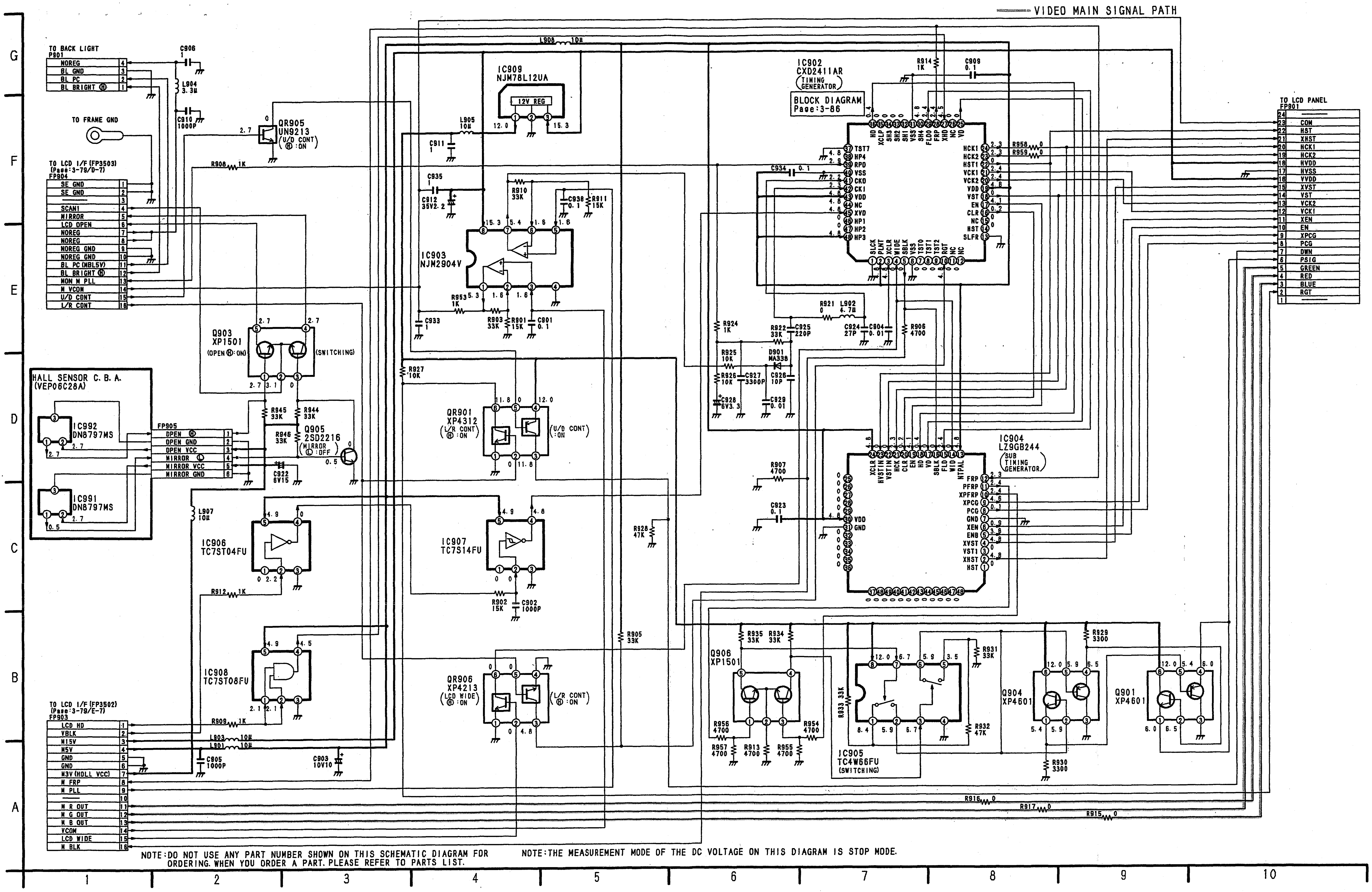
EVF-B IC BLOCK

IC802:ET2070FOC

(SCHEMATIC DIAGRAM:Page 3-82/D-4)


CLO
VDD1
OFH
WMODE
VMODE
OSCI
OSCO
H-COUNTER
1/2 DIVIDING
NTSC/PAL, WIDE/4:3 SELECT
V-COUNTER
Y-SIGNAL DEMODULATE DECODER
1H/1V SWITCH
VDOUT
HVSW
FRP
X-SIGNAL DEMODULATE DECODER
BLK
SYMODE
HSYNC
H-SYNC PULSE DETECT
VSYNC
MVSYNC
V-SYNC PULSE DETECT
MHSYNC
HD SELECT
HD OUT
W BLD3
W BLD2
W BLD1
PSMODE
PHASE COMPARE
BACK LIGHT DRIVE, PULSE WIDTH SELECT
S BLD
BLD IN
VDD2
LEVEL SHIFTER
PCO
DX
CLK
CLK
SB
DY
CLY
CLY
BLD

3-30. MONITOR & HALL SENSOR SCHEMATIC DIAGRAM

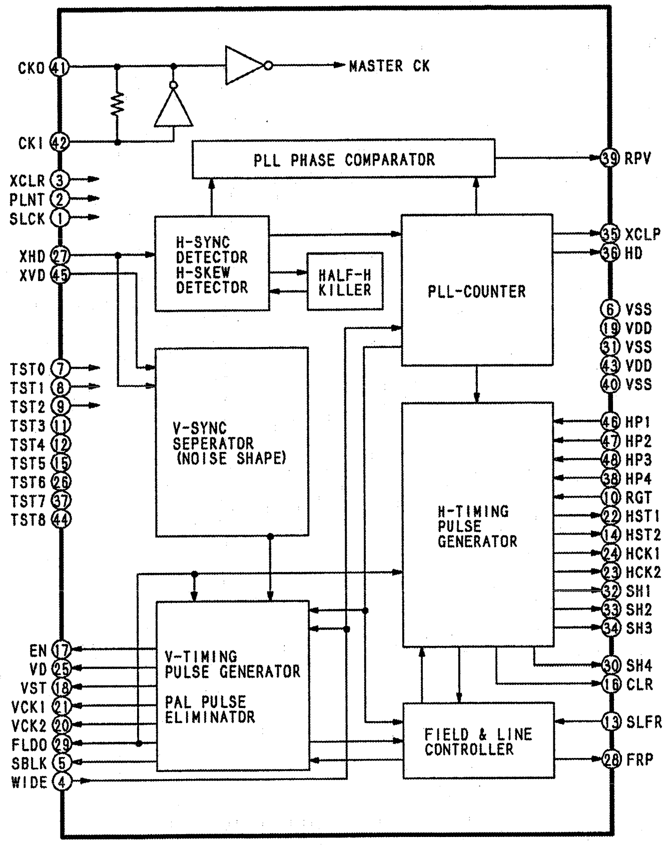

VIDEO MAIN SIGNAL PATH
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
TO BACK LIGHT
P901
NOREG 4
BL GND 3
BL PC 2
BL BRIGHT Ⓗ 1
C906 1
L904 3.3μ
C910 1000P
TO FRAME GND
TO LCD I/F (FP3503)
(Page:3-79/D-7)
FP904
SE GND 1
SE GND 2
3
SCAN1 4
MIRROR 5
LCD OPEN 6
NOREG 7
NOREG 8
NOREG GND 9
NOREG GND 10
BL PC (MBL5V) 11
BL BRIGHT Ⓗ 12
MON M PLL 13
M VCOM 14
U/D CONT 15
L/R CONT 16
QR905
UN9213
(U/D CONT)
(Ⓗ:ON)
R908 1K
L908 10μ
IC909
NJM78L12UA
12V REG
L905 10μ
C911 1
C935 1
C912 35V2.2
R910 33K
C938 0.1
R911 15K
IC903
NJM2904V
R953 1K
C933 1
R903 33K
R901 15K
C901 0.1
Q903
XP1501
(OPEN Ⓗ:ON)
(SWITCHING)
HALL SENSOR C.B.A.
(VEP06C28A)
IC992
DN8797MS
IC991
DN8797MS
FP905
OPEN Ⓗ 1
OPEN GND 2
OPEN VCC 3
MIRROR Ⓛ 4
MIRROR VCC 5
MIRROR GND 6
R945 33K
R944 33K
R946 33K
Q905
2SD2216
(MIRROR)
(Ⓛ:OFF)
C922 6V15
R927 10K
QR901
XP4312
(L/R CONT)
(Ⓗ:ON)
(U/D CONT)
(:ON)
L907 10μ
IC906
TC7ST04FU
R912 1K
IC907
TC7S14FU
R902 15K
C902 1000P
IC908
TC7ST08FU
R909 1K
L903 10μ
L901 10μ
C905 1000P
C903 10V10
QR906
XP4213
(LCD WIDE)
(Ⓗ:ON)
(L/R CONT)
(Ⓗ:ON)
R905 33K
R928 47K
TO LCD I/F (FP3502)
(Page:3-79/E-7)
FP903
LCD HD 1
VBLK 2
M15V 3
M5V 4
GND 5
GND 6
M3V (HOLL VCC) 7
M FRP 8
M PLL 9
10
M R OUT 11
M G OUT 12
M B OUT 13
VCOM 14
LCD WIDE 15
M BLK 16
IC902
CXD2411AR
(TIMING GENERATOR)
BLOCK DIAGRAM
Page:3-86
R914 1K
C909 0.1
C934 0.1
TST7
HP4
RPD
VSS
CKO
CKI
VDD
NC
XVD
HP1
HP2
HP3
HD
XCLR
SH3
SH2
SH1
VS3
SH4
FLDO
FRP
XHD
NC
VD
HCK1
HCK2
HST1
VCK1
VCK2
VDD
VST
EN
CLR
NC
HST
SLFR
SLCK
PLNT
XSTBY
XCLR
WIDE
SBLK
VS1
VS2
TST0
TST1
TST2
RGT
NC
NC
R958 0
R959 0
R921 0
L902 4.7μ
R924 1K
R922 33K
C925 220P
C924 27P
C904 0.01
R906 4700
R925 10K
D901 MA338
R926 10K
C927 3300P
C926 10P
C928 6V3.3
C929 0.01
R907 4700
C923 0.1
IC904
LZ9GB244
(SUB TIMING GENERATOR)
XCLR
HWSTIN
VSTIN
HCK
CLR
WIDE
HD
VD
SBLK
FLD
MID
NTPAL
FRP
PFRP
XPFRP
XPCG
PCG
GND
XEN
ENB
XVST
VST1
XHST
HST
VDD
GND
TO LCD PANEL
FP901
24
23 COM
22 HST
21 XHST
20 HCK1
19 HCK2
18 HVDD
17 HVSS
16 VVDD
15 XVST
14 VST
13 VCK2
12 VCK1
11 XEN
10 EN
9 XPCG
8 PCG
7 DWN
6 PSIG
5 GREEN
4 RED
3 BLUE
2 RGT
1
R935 33K
R934 33K
Q906
XP1501
R956 4700
R957 4700
R913 4700
R955 4700
R954 4700
R933 33K
R931 33K
IC905
TC4W66FU
(SWITCHING)
R932 47K
R929 3300
Q904
XP4601
R930 3300
Q901
XP4601
R916 0
R917 0
R915 0

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

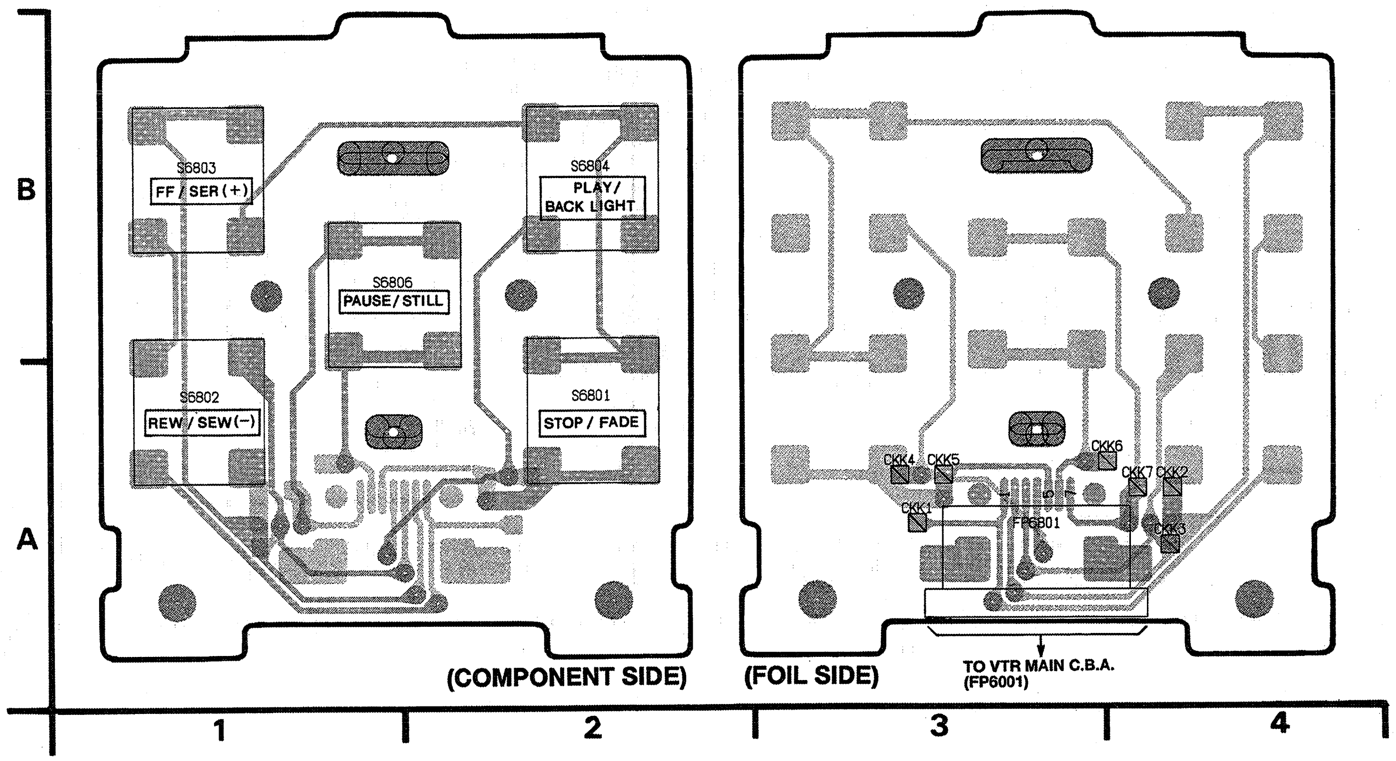
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

Back Page:
E.V.F.(A) & (B) Section

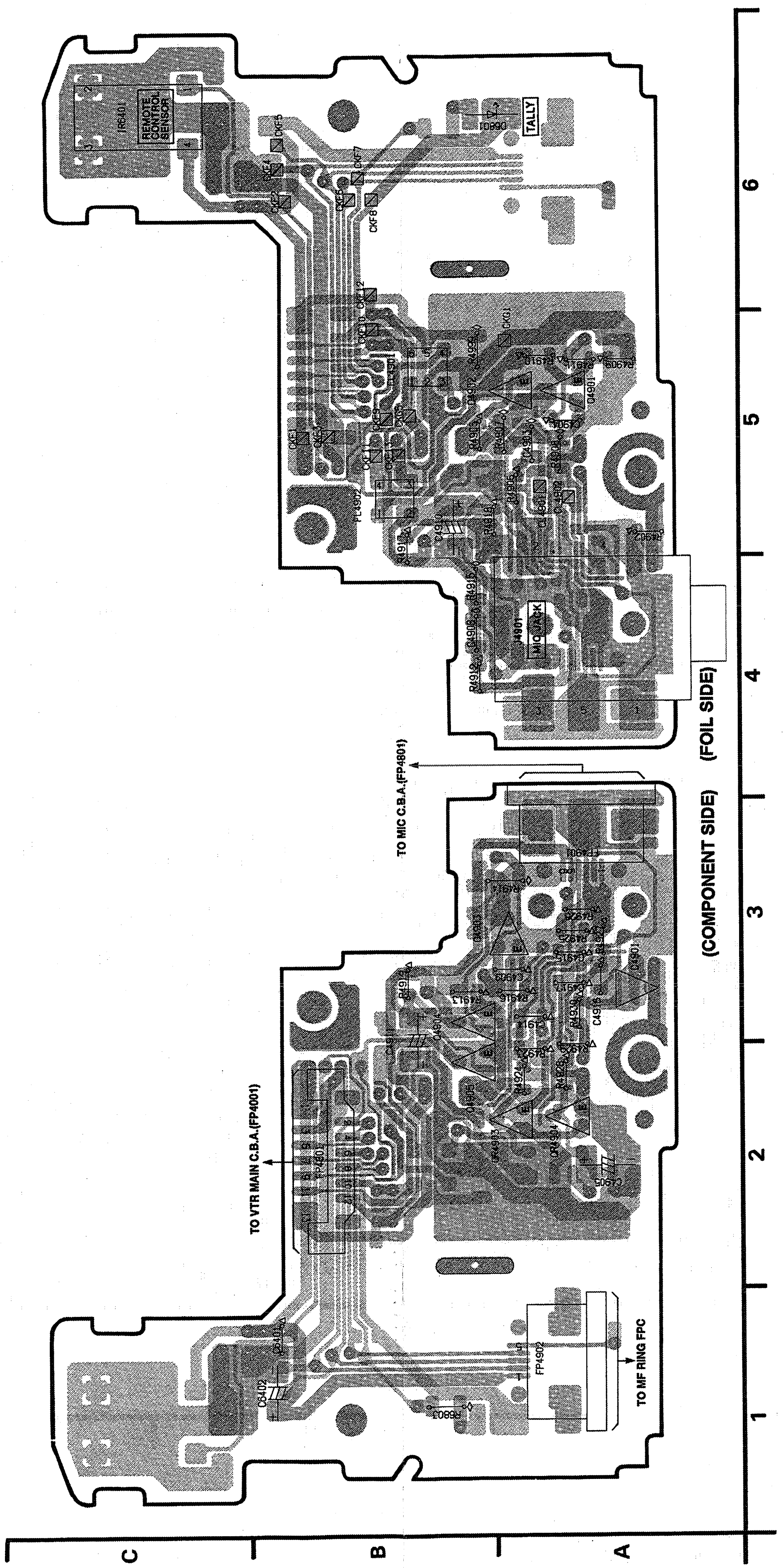
MONITOR IC BLOCK
IC902:CXD2411AR
(SCHEMATIC DIAGRAM:Page 3-85/F-7)


CKO 41
CKI 42
MASTER CK
PLL PHASE COMPARATOR
39 RPV
XCLR 3
PLNT 2
SLCK 1
XHD 27
XVD 45
H-SYNC DETECTOR H-SKEW DETECTOR
HALF-H KILLER
PLL-COUNTER
35 XCLP
36 HD
6 VSS
19 VDD
31 VSS
43 VDD
40 VSS
TST0 7
TST1 8
TST2 9
TST3 11
TST4 12
TST5 15
TST6 26
TST7 37
TST8 44
V-SYNC SEPERATOR (NOISE SHAPE)
H-TIMING PULSE GENERATOR
46 HP1
47 HP2
48 HP3
38 HP4
10 RGT
22 HST1
14 HST2
24 HCK1
23 HCK2
32 SH1
33 SH2
34 SH3
EN 17
VD 25
VST 18
VCK1 21
VCK2 20
FLDO 29
SBLK 5
WIDE 4
V-TIMING PULSE GENERATOR
PAL PULSE ELIMINATOR
30 SH4
16 CLR
FIELD & LINE CONTROLLER
13 SLFR
28 FRP

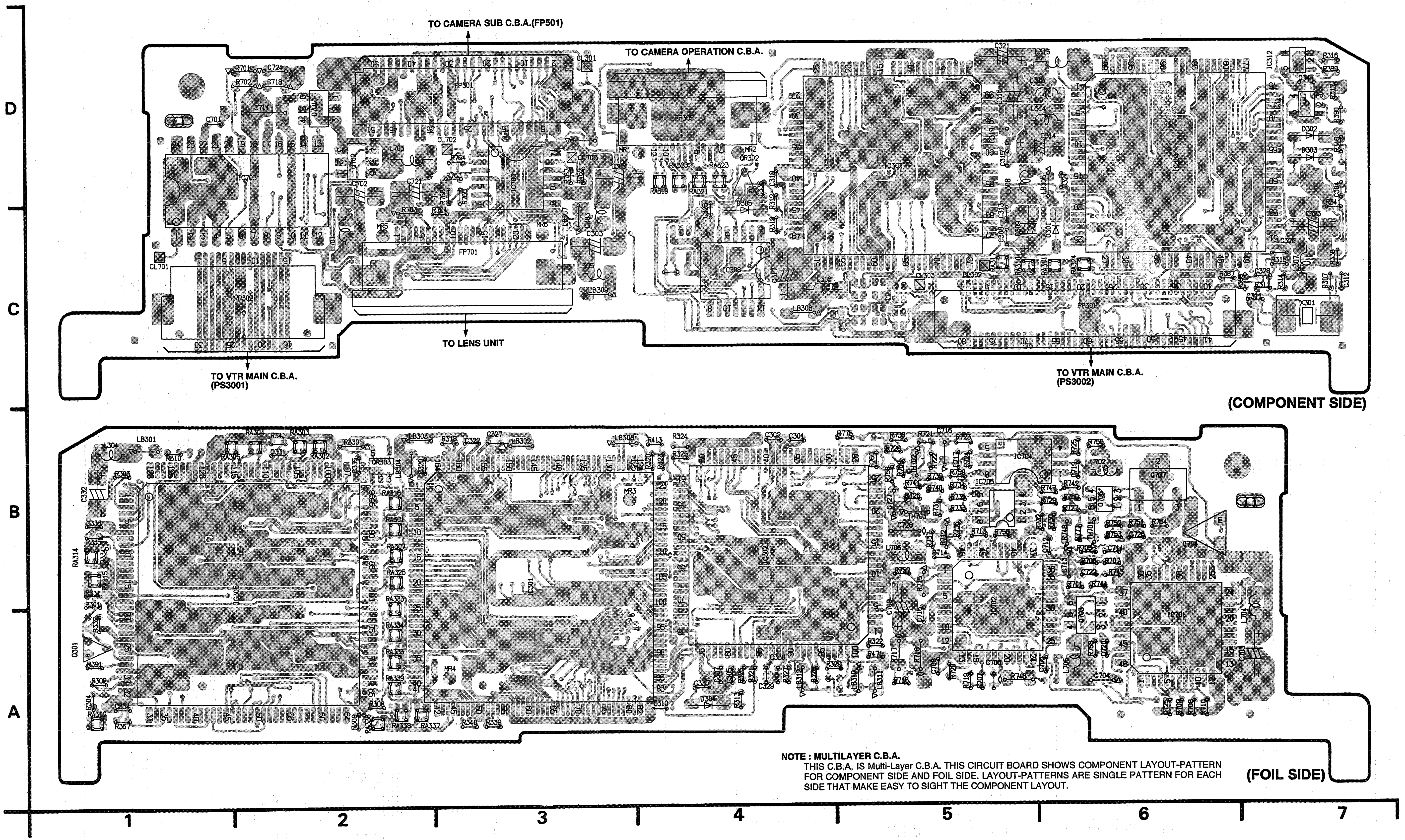
3-31. TOP OPERATION C.B.A. (VEP06C24A)


B
A
S6803
FF / SER (+)
S6804
PLAY/ BACK LIGHT
S6806
PAUSE / STILL
S6802
REW / SEW (−)
S6801
STOP / FADE
CKK4
CKK5
CKK6
CKK7
CKK2
CKK1
CKK3
FP6801
TO VTR MAIN C.B.A. (FP6001)
(COMPONENT SIDE)
(FOIL SIDE)
1
2
3
4

3-32. FRONT C.B.A. (VEP04684A)


REMOTE CONTROL SENSOR
TALLY
MIC JACK
TO MIC C.B.A.(FP4801)
TO VTR MAIN C.B.A.(FP4001)
TO MF RING FPC
FP4902
(FOIL SIDE)
(COMPONENT SIDE)
6
5
4
3
2
1
C
B
A

3-33. CAMERA MAIN [Process , Camera Operation Section] C.B.A. (VEP23443B)


TO CAMERA SUB C.B.A.(FP501)
TO CAMERA OPERATION C.B.A.
TO LENS UNIT
TO VTR MAIN C.B.A.
(PS3001)
TO VTR MAIN C.B.A.
(PS3002)
(COMPONENT SIDE)
(FOIL SIDE)
FP301
FP305
FP302
FP701
PP301
IC703
IC706
IC308
IC303
IC304
IC305
IC301
IC302
IC702
IC701
IC704
IC705
D
C
B
A
1
2
3
4
5
6
7

NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

Back Page: TOP OPERATION
& FRONT C.B.A. Section

CAMERA MAIN C.B.A.

Integrated Circuit	
IC301	B-3
IC302	B-4
IC303	D-5
IC304	D-6
IC305	B-2
IC308	C-4
IC311	D-7
IC312	D-7
IC701	A-6
IC702	A-5
IC703	D-2
IC704	B-5
IC705	B-5
IC706	D-3

Transistor	
Q301	A-1
Q701	D-2
Q702	D-2
Q703	A-6
Q704	B-6
Q706	B-6
Q707	B-6

Transistor & Resistor	
QR302	D-4
QR303	B-2

Test Point	
CL301	D-3
CL302	C-5
CL303	C-5
CL701	C-1
CL702	D-3
CL703	D-3

Diode	
D301	C-6
D302	D-7
D303	D-7
D304	A-4
D305	C-4

Connector	
FP301	D-3
FP305	D-4
FP701	C-3
PP301	C-6
PP302	C-2

Coil	
L303	C-3
L304	B-1
L305	C-3
L306	C-4
L307	C-7
L308	D-5
L313	D-6
L314	D-6
L315	D-6
L701	C-2
L702	B-6
L703	D-2
L704	A-7
L705	A-6
L706	B-5
LB301	B-1
LB302	B-3
LB303	B-2
LB304	B-2
LB305	D-6
LB306	C-4
LB307	C-3
LB308	B-3
LB309	C-3
LB310	A-5
LB311	A-5
LB312	A-4

Thermal Resistor	
TH701	B-6
TH702	B-5
TH703	B-5

Crystal Oscillator	
X301	C-7

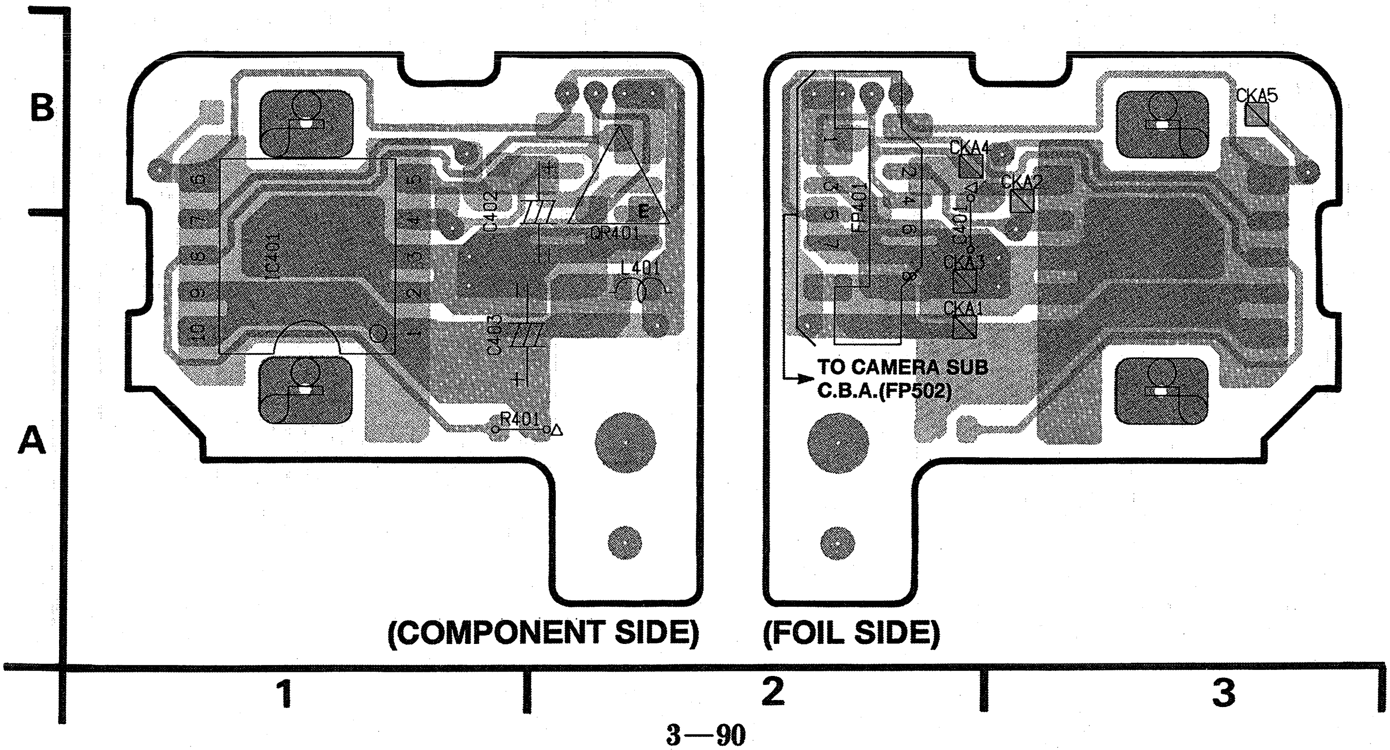
Capacitor	
C301	B-4
C302	B-4
C303	C-3
C304	D-7
C305	A-4
C306	D-3
C307	A-4
C308	C-5
C309	C-5
C310	A-4
C311	C-7
C312	C-7
C313	C-5
C314	D-6
C315	D-5
C316	D-5
C317	C-4
C318	D-4
C319	D-5
C320	B-2
C321	D-5
C322	B-3
C323	C-7
C324	D-6
C325	C-4
C326	C-7
C327	B-3
C328	C-7
C329	A-4
C330	A-4
C331	B-2
C332	B-1
C333	B-1
C334	A-1
C335	B-2
C336	D-4
C337	A-4
C347	D-7
C701	D-1
C702	D-2
C703	A-7
C704	A-6
C705	A-6
C706	A-5
C707	A-5
C708	A-5
C709	A-5
C711	D-2
C712	B-6
C713	B-6
C714	B-6
C715	A-5
C716	B-5
C717	B-5
C718	D-2
C719	B-6.
C720	A-6
C721	D-2
C722	B-6
C724	D-2
C725	A-6
C726	B-6
C727	B-5
C728	B-5

Resistor	
R301	B-1
R302	A-1
R303	B-1
R304	A-1
R307	C-7
R308	A-2
R309	A-2
R310	B-2
R311	C-7
R312	C-4
R313	A-4
R314	C-7
R315	C-7
R316	D-7
R317	D-7
R318	B-3
R319	C-4
R320	B-4
R321	A-4
R322	A-5
R323	B-4
R324	B-4
R325	B-4
R326	A-4
R327	A-4
R328	A-4
R329	A-4
R330	A-2
R331	B-1
R332	A-1
R334	B-1
R335	B-1
R338	C-7
R339	A-3
R340	A-3
R341	C-7
R343	B-2
R346	D-7
R367	A-1
R387	C-6
R388	C-7
R389	D-7
R390	D-7
R391	A-1
R413	B-4
R471	A-5
R701	D-2
R702	D-2
R703	C-2
R704	C-3
R705	B-6
R706	B-6
R707	B-6
R708	A-6
R709	A-6
R710	A-6
R711	B-6
R712	B-5
R713	B-5
R714	B-5
R715	B-5
R716	A-5
R717	A-5
R718	A-5
R719	A-5
R720	A-5
R721	B-5
R722	B-5
R723	B-5
R724	B-5
R725	B-6
R726	B-5
R727	B-6
R728	B-5
R729	B-6
R730	B-6
R731	B-5
R732	B-6
R733	B-5
R734	B-5
R735	B-5
R736	B-5
R737	B-5
R738	B-5
R739	B-5
R740	B-5
R741	B-5
R742	B-6
R743	B-6
R744	B-6
R746	A-5
R747	B-6
R748	B-6
R750	B-6
R751	B-6
R752	B-6
R753	B-6
R754	B-6
R755	B-6
R756	B-5
R757	B-5
R758	B-5
R759	B-5
R760	B-5
R762	D-3
R763	D-3
R764	D-3
R765	D-3
R766	D-3
R767	D-3
R768	A-6
R769	B-5
R775	B-5
R777	B-6

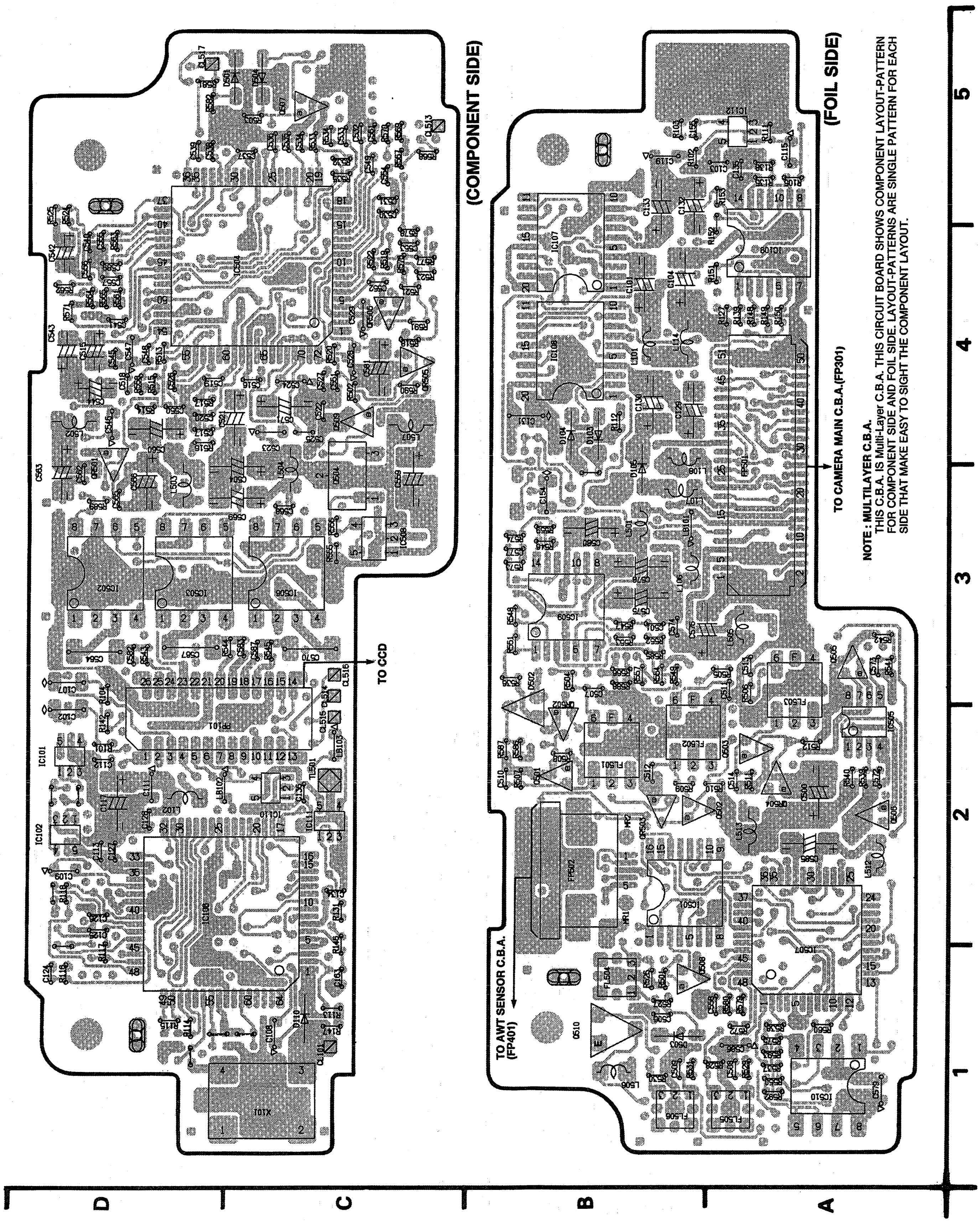
Resistor Array	
RA301	B-2
RA302	B-2
RA303	B-2
RA304	B-2
RA305	B-1
RA307	B-2
RA310	C-5
RA311	C-6
RA312	A-1
RA314	B-1
RA315	B-1
RA316	B-2
RA317	C-5
RA319	D-4
RA320	D-4
RA321	D-4
RA323	D-4
RA324	C-6
RA325	B-2
RA333	B-2
RA334	A-2
RA335	A-2
RA336	A-2
RA337	A-2
RA338	A-2
RA339	A-2

ADDRESS INFORMATION

3-34. AWT SENSOR C.B.A. (VEP22270A)



3-35. CAMERA SUB [Sensor , Analog Pre Process , AWT Sensor Section] C.B.A. (VEP22278A)


(COMPONENT SIDE)
(FOIL SIDE)
TO CCD
TO CAMERA MAIN C.B.A.(FP301)
TO AWT SENSOR C.B.A. (FP401)
IC504
IC502
IC503
IC506
IC508
FP101
IC101
IC102
IC106
IC110
IC111
X101
IC107
IC108
IC109
FP501
IC112
IC509
FL501
FL502
FL503
FL504
FL505
FL506
FP502
IC501
IC507
IC510
IC505
1
2
3
4
5
A
B
C
D

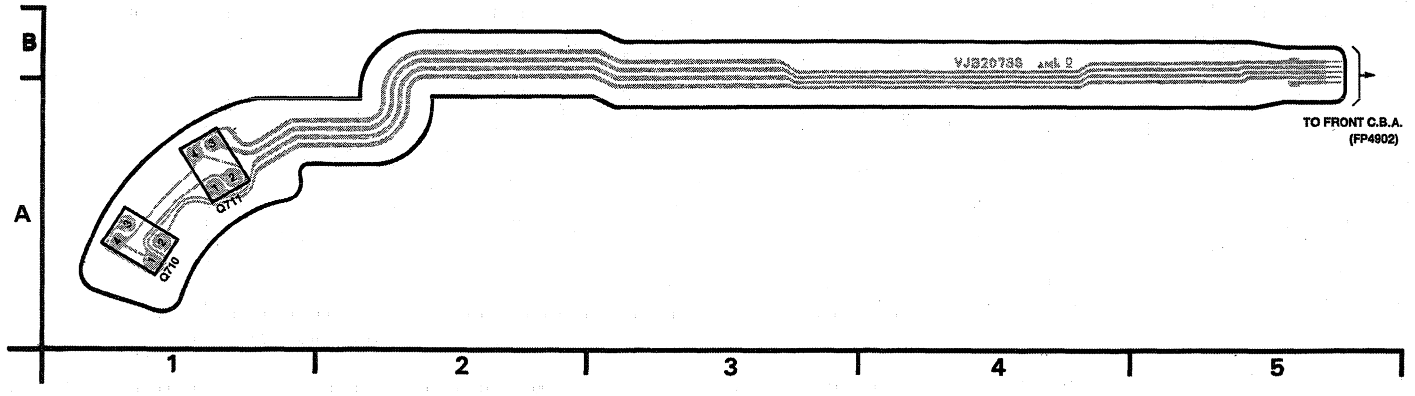
NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

CAMERA SUB C.B.A.

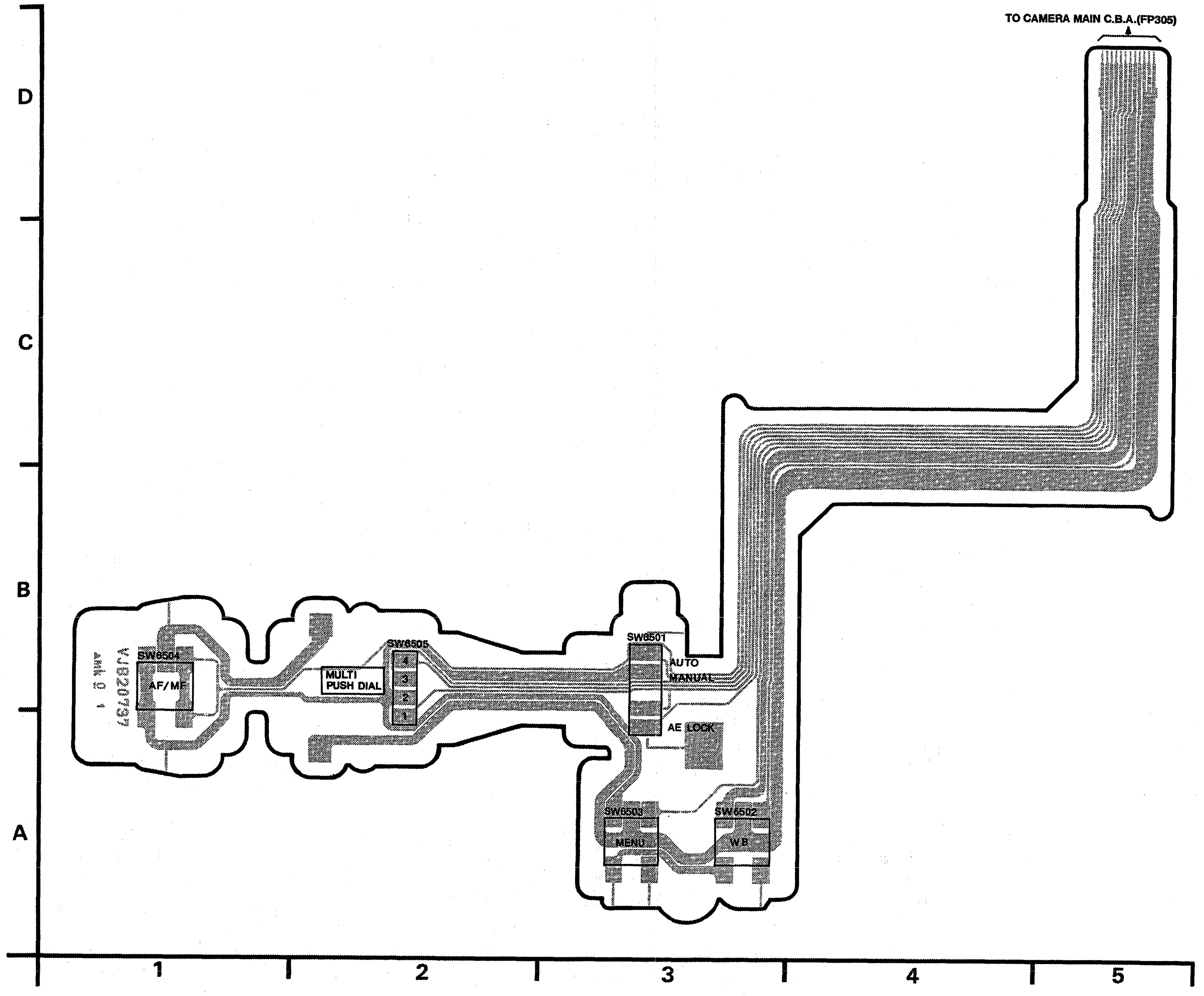
Integrated Circuit	
IC101	D-2
IC102	D-2
IC106	D-2
IC107	B-4
IC108	B-4
IC109	A-4
IC110	C-2
IC111	C-2
IC112	A-5
IC501	B-2
IC502	D-3
IC503	D-3
IC504	C-4
IC505	A-2
IC506	C-3
IC507	A-1
IC508	C-3
IC509	B-3
IC510	A-1
Transistor	
Q501	B-2
Q502	A-2
Q503	A-2
Q504	C-3
Q505	A-3
Q506	A-2
Q507	C-5
Q508	B-1
Q509	C-4
Q510	B-1
Transistor & Resistor	
QR501	D-3
QR502	B-2
QR503	B-2
QR504	A-2
QR505	C-4
QR506	C-4
Test Point	
CL101	C-1
CL513	C-5
CL514	C-3
CL515	C-2
CL516	C-3
CL517	D-5
TL501	C-2
Diode	
D103	B-4
D104	B-4
D105	B-3
D110	C-1
D501	C-5
D502	B-3
D503	B-1
D504	C-5
Filter	
FL501	B-2
FL502	B-2
FL503	A-3
FL504	B-1
FL505	A-1
FL506	B-1
Connector	
FP501	A-3
FP502	B-2
PP101	D-2
Coil	
L101	B-4
L102	D-2
L106	B-3
L107	B-3
L108	B-3
L114	B-4
L501	B-3
L502	D-4
L503	D-3
L504	C-3
L505	A-3
L506	B-1
L507	C-4
L512	A-2
L513	A-2
LB101	B-3
LB102	D-2
LB103	C-2
Crystal Oscillator	
X101	C-1
Capacitor	
C101	B-4
C102	D-2
C103	A-5
C104	B-4
C107	D-3
C108	C-1
C109	D-2
C111	D-2
C112	D-2
C113	D-2
C115	A-5
C117	D-2
C119	B-5
C124	D-1
C125	D-2
C126	D-2
C127	D-2
C128	D-2
C129	B-4
C130	B-4
C131	B-4
C132	B-5
C133	B-5
C134	C-2
C135	A-5
C136	C-2
C154	B-3
C155	B-5
C163	C-1
C500	A-2
C501	B-3
C504	C-3
C506	B-1
C507	B-3
C508	A-1
C509	B-1
C510	B-2
C511	A-3
C512	B-2
C513	A-3
C514	A-2
C515	D-4
C516	C-4
C517	D-4
C518	D-4
C519	D-4
C520	D-4
C521	D-4
C522	C-4
C523	C-4
C524	C-4
C525	C-4
C526	D-4
C527	C-4
C528	C-4
C529	C-4
C530	C-5
C531	C-5
C532	C-5
C533	C-5
C534	C-5
C535	C-5
C536	C-5
C537	C-5
C538	D-5
C539	D-5
C540	D-4
C541	D-4
C542	D-4
C543	D-4
C544	D-4
C545	D-4
C546	D-4
C547	D-4
C548	D-4
C549	C-5
C550	D-4
C551	C-4
C552	C-4
C553	C-4
C554	C-5
C555	D-4
C556	D-4
C557	D-4
C558	A-1
C559	C-3
C560	D-4
C561	C-5
C562	D-3
C563	D-3
C564	D-3
C565	D-3
C566	D-3
C567	D-3
C568	C-3
C569	C-3
C570	C-3
C571	C-4
C572	A-2
C573	A-3
C574	B-3
C575	B-3
C576	B-3
C577	B-3
C578	B-3
C579	A-1
C580	B-3
C581	C-4
C582	D-3
C583	C-3
C585	A-2
C586	A-1
C587	C-3
C589	D-4
Resistor	
R101	D-2
R102	B-5
R103	B-5
R104	D-3
R105	A-5
R111	A-5
R112	B-4
R113	C-1
R114	D-1
R115	D-1
R116	D-1
R117	D-1
R118	D-2
R127	A-4
R131	C-2
R135	A-5
R138	A-5
R139	A-4
R142	D-2
R146	C-1
R147	C-1
R148	A-4
R149	A-4
R150	A-4
R151	A-4
R152	A-4
R153	A-5
R501	B-1
R502	C-4
R503	C-5
R504	B-3
R505	A-3
R506	A-3
R507	B-2
R508	B-2
R509	B-2
R510	A-2
R511	A-2
R512	A-2
R513	D-4
R514	D-4
R515	D-4
R516	D-4
R517	D-4
R518	C-4
R519	C-4
R520	C-4
R521	C-4
R522	C-4
R523	C-4
R524	D-5
R525	D-5
R526	B-1
R527	B-1
R528	A-1
R529	A-1
R530	B-1
R531	B-1
R532	C-5
R533	C-5
R534	C-5
R535	C-5
R536	B-3
R537	A-1
R538	A-1
R539	A-2
R540	A-2
R541	A-3
R542	A-3
R543	D-3
R544	C-3
R545	C-3
R546	B-3
R547	B-3
R548	B-3
R549	B-3
R550	A-1
R551	B-3
R552	B-3
R553	B-3
R554	B-3
R555	C-3
R556	C-3
R557	B-3
R558	D-4
R559	B-3
R560	A-1
R561	D-4
R562	D-4
R563	D-4
R564	D-4
R565	D-4
R566	B-3
R567	C-5
R568	C-5
R569	C-5
R570	C-5
R571	D-4
R572	A-1
R573	B-3
R574	B-3
R575	A-1
R576	C-4
R577	C-4
R578	C-4
R579	A-1
R580	A-1
R581	D-5
R582	D-5
R585	B-3
R586	B-2
R587	B-2
R588	B-3
R589	D-3
R590	C-4
R591	C-4
R592	A-1
R593	A-1

ADDRESS INFORMATION

3-36. MF RING C.B.A. (VXP1846)



3-37. CAMERA OPERATION C.B.A. (VEP20737A)



3-38. VTR MAIN [VTR Main Connection , System Control & Servo , Video1 , Video2 , LCD , Digital I/F , Audio , Sound Title Section] C.B.A. (VEP03E52A)

VTR MAIN C.B.A. (1)

Integrated Circuit		
IC601	D-3	Ⓕ
IC602	D-3	Ⓕ
IC603	D-6	Ⓒ
IC604	D-4	Ⓒ
IC605	C-7	Ⓒ
IC606	C-6	Ⓒ
IC2001	B-3	Ⓒ
IC2002	B-5	Ⓕ
IC2003	B-4	Ⓕ
IC2004	B-4	Ⓕ
IC2005	A-3	Ⓒ
IC2006	A-5	Ⓒ
IC2007	A-5	Ⓕ
IC2008	B-5	Ⓕ
IC2009	B-7	Ⓕ
IC2010	A-6	Ⓕ
IC2011	B-2	Ⓒ
IC2012	C-4	Ⓒ
IC2013	B-6	Ⓕ
IC2014	A-5	Ⓕ
IC2015	D-7	Ⓕ
IC3001	C-2	Ⓒ
IC3002	C-4	Ⓒ
IC3003	C-4	Ⓕ
IC3004	C-3	Ⓒ
IC3005	D-5	Ⓕ
IC3006	C-2	Ⓕ
IC3007	D-6	Ⓕ
IC3201	C-5	Ⓒ
IC3202	C-6	Ⓒ
IC3203	A-3	Ⓕ
IC3204	C-3	Ⓕ
IC3205	A-5	Ⓒ
IC3801	C-6	Ⓕ
IC4001	A-6	Ⓒ
IC4201	B-6	Ⓒ
IC4501	B-3	Ⓕ
IC4701	A-1	Ⓒ
IC6501	A-6	Ⓕ
IC6502	A-6	Ⓕ
IC6503	A-6	Ⓕ
IC6505	D-6	Ⓕ
IC6506	D-6	Ⓕ

Transistor		
Q601	C-2	Ⓕ
Q602	C-2	Ⓕ
Q603	C-5	Ⓒ
Q604	C-2	Ⓕ
Q605	C-1	Ⓕ
Q606	B-1	Ⓕ
Q608	B-1	Ⓕ
Q609	D-5	Ⓒ
Q610	C-7	Ⓒ
Q611	C-1	Ⓕ
Q2001	B-5	Ⓕ
Q2002	A-2	Ⓒ
Q2003	A-4	Ⓕ
Q2006	B-4	Ⓕ
Q2008	B-4	Ⓒ
Q3001	B-3	Ⓒ
Q3002	C-3	Ⓒ
Q3201	A-3	Ⓕ
Q3202	B-2	Ⓕ
Q3203	A-3	Ⓕ
Q3204	A-4	Ⓕ
Q4001	A-2	Ⓕ
Q4701	A-1	Ⓕ
Q4702	A-1	Ⓕ

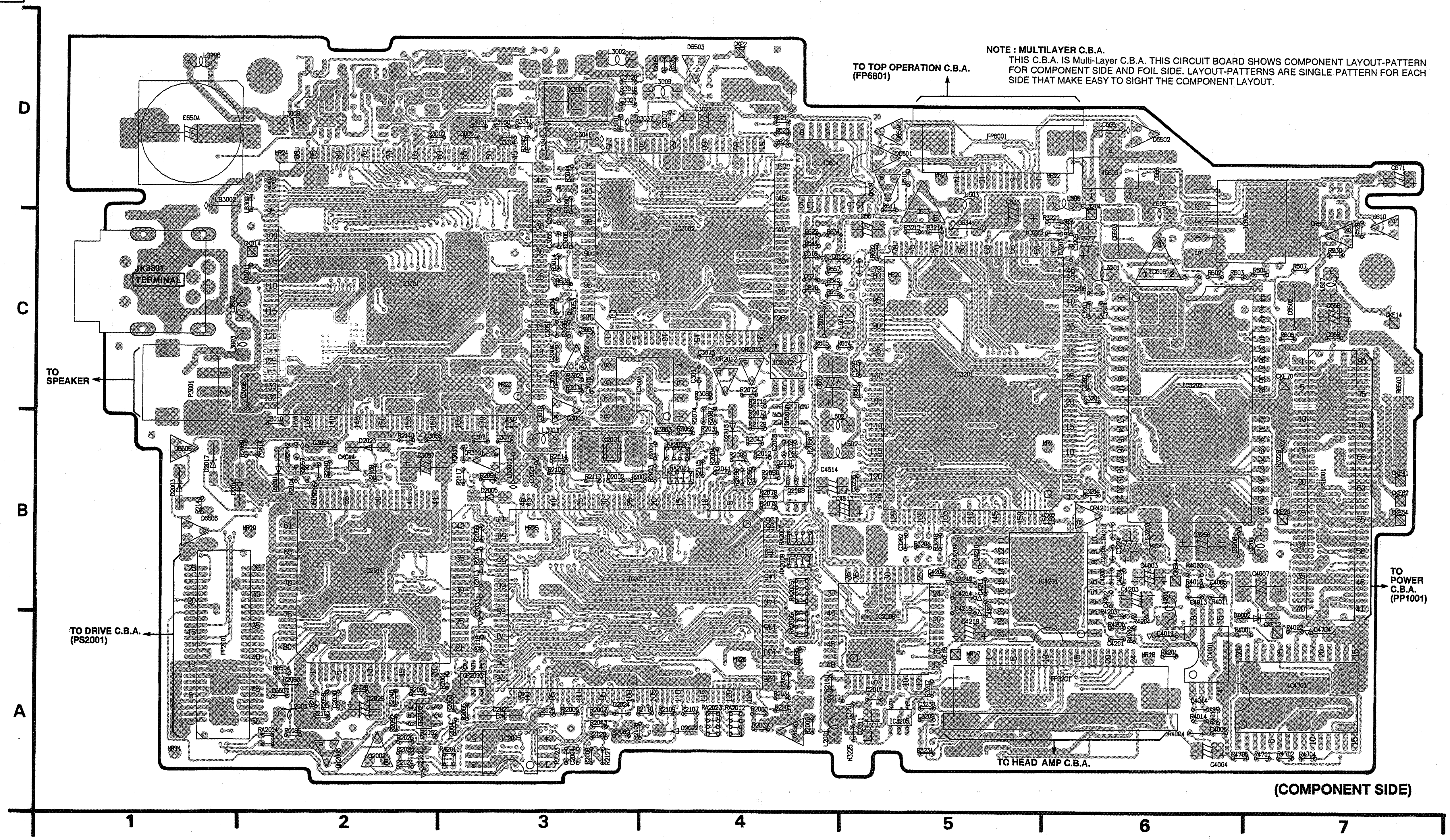
Transistor & Resistor		
QR601	C-7	Ⓒ
QR602	C-3	Ⓕ
QR604	A-1	Ⓕ
QR605	A-1	Ⓕ
QR606	C-1	Ⓕ
QR607	C-1	Ⓕ
QR2001	B-7	Ⓕ
QR2002	A-2	Ⓒ
QR2003	A-3	Ⓒ
QR2004	A-4	Ⓕ
QR2005	A-4	Ⓕ
QR2006	A-1	Ⓒ
QR2007	A-5	Ⓕ
QR2008	B-4	Ⓒ
QR2009	B-5	Ⓕ
QR2010	B-6	Ⓕ
QR2011	B-7	Ⓕ
QR2012	C-4	Ⓒ
QR2013	C-4	Ⓒ
QR3001	B-3	Ⓒ
QR4001	B-2	Ⓕ
QR4002	B-2	Ⓕ
QR4003	B-2	Ⓕ
QR4201	B-6	Ⓒ
QR4703	A-2	Ⓕ

Test Point		
CKC43	B-5	Ⓕ
CKC44	B-2	Ⓒ
CKC45	A-6	Ⓕ
CKC46	A-5	Ⓕ
CKC47	C-7	Ⓕ
CKC48	C-5	Ⓕ
CKC49	C-7	Ⓕ
CKC50	A-5	Ⓕ
CKC51	B-6	Ⓕ
CKD3	C-5	Ⓕ
CKD6	C-5	Ⓕ
CKD7	D-5	Ⓕ
CKD11	C-5	Ⓕ
CKD12	C-6	Ⓕ
CKD13	C-6	Ⓕ
CKD14	C-2	Ⓒ
CKD62	D-6	Ⓕ
CKD70	D-6	Ⓕ
CKD71	D-6	Ⓕ
CKD72	D-6	Ⓕ
CKD78	D-5	Ⓕ
CKD79	D-5	Ⓕ
CKD80	D-5	Ⓕ
CKE2	D-4	Ⓒ
CKE14	C-7	Ⓒ
CKE16	A-5	Ⓒ
CKE20	B-7	Ⓒ
CKE41	B-7	Ⓒ
CKE44	B-6	Ⓒ
CKE54	B-7	Ⓒ
CKE58	B-1	Ⓕ
CKE62	B-7	Ⓒ
CKE64	D-1	Ⓕ
CKE66	D-1	Ⓕ
CKE70	C-7	Ⓒ
CKF11	A-1	Ⓕ
CKF12	A-7	Ⓒ
CKF13	A-1	Ⓕ
CKG1	A-7	Ⓕ
CKG5	A-5	Ⓕ
CL3001	D-6	Ⓕ
CL3002	C-5	Ⓕ
CL3004	C-4	Ⓕ
CL3202	B-3	Ⓕ
CL3203	C-4	Ⓕ
CL3204	C-4	Ⓒ

Diode		
D2001	B-2	Ⓒ
D2002	B-6	Ⓕ
D2003	B-1	Ⓒ
D2004	A-5	Ⓕ
D2005	B-3	Ⓒ
D2006	A-4	Ⓒ
D2007	A-4	Ⓕ
D2010	B-1	Ⓒ
D2011	A-5	Ⓕ
D2012	B-5	Ⓕ
D2013	B-4	Ⓒ
D2015	A-3	Ⓕ
D2016	A-4	Ⓕ
D2017	B-1	Ⓒ
D2018	A-4	Ⓕ
D2020	A-3	Ⓒ
D2021	A-5	Ⓕ
D2022	A-4	Ⓒ
D2023	B-2	Ⓒ
D2024	B-5	Ⓕ
D2025	B-6	Ⓕ
D3201	A-3	Ⓕ
D3202	A-4	Ⓕ
D4001	B-1	Ⓕ
D4002	A-7	Ⓒ
D6501	D-5	Ⓒ
D6502	D-6	Ⓒ

ADDRESS INFORMATION Ⓒ... COMPONENT SIDE Ⓕ... FOIL SIDE

COMPONENT SIDE



NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

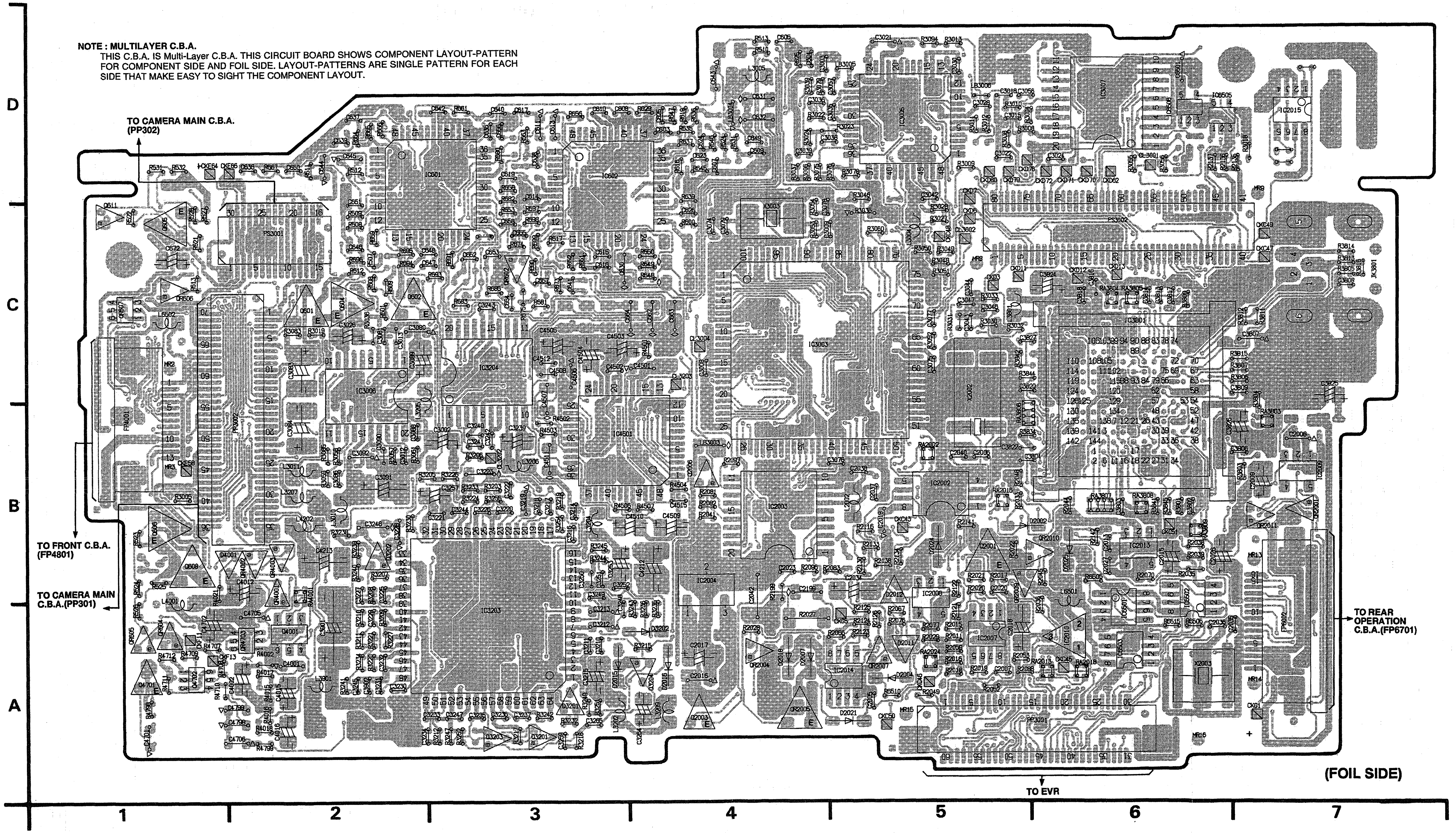
Back Page: MF RING
& CAMERA OPERATION C.B.A. Section

VTR MAIN C.B.A. (2)

D6503	D-4 ©	PP2001	A-1 ©	L603	D-5 ©	L3006	D-1 ©	L3207	B-2 Ⓕ	L6501	B-6 Ⓕ	**Crystal Oscillator**		C603	D-4 Ⓕ	C614	D-3 Ⓕ	C625	D-4 Ⓕ	C639	D-2 Ⓕ	C650	D-2 Ⓕ	C664	C-4 Ⓕ	C2004	A-3 ©	C2015	B-6 Ⓕ	C2027	B-6 Ⓕ
D6504	D-5 ©	PP3001	A-6 Ⓕ	L605	D-6 ©	L3008	D-2 ©	L3208	B-7 ©	L6502	C-1 Ⓕ	X2001	B-3 ©	C604	D-4 Ⓕ	C615	C-3 Ⓕ	C626	C-4 Ⓕ	C640	D-3 Ⓕ	C651	C-2 Ⓕ	C665	D-6 ©	C2005	A-5 Ⓕ	C2016	A-4 Ⓕ	C2028	A-2 ©
D6505	B-1 ©	PP3002	B-2 Ⓕ	L606	D-6 ©	L3009	D-4 ©	L3209	A-4 Ⓕ	LB3001	B-3 ©	X2002	C-5 Ⓕ	C605	D-4 ©	C616	C-3 Ⓕ	C630	C-3 Ⓕ	C641	C-3 Ⓕ	C652	C-3 Ⓕ	C666	D-6 ©	C2006	B-5 Ⓕ	C2017	A-4 Ⓕ	C2029	A-2 ©
D6506	B-1 ©	PS1001	B-7 ©	L607	C-7 ©	L3010	B-2 Ⓕ	L3801	C-5 Ⓕ	LB3002	D-1 ©	X2003	A-6 Ⓕ	C606	D-4 Ⓕ	C617	D-3 Ⓕ	C631	D-4 Ⓕ	C642	D-3 Ⓕ	C653	C-3 Ⓕ	C667	C-5 ©	C2007	A-5 Ⓕ	C2018	A-5 Ⓕ	C2030	A-2 ©
Connector		PS3001	C-2 Ⓕ	L2001	A-4 ©	L3011	B-2 Ⓕ	L3802	C-1 ©	LB3003	B-4 Ⓕ	X3001	D-3 ©	C607	D-4 Ⓕ	C618	C-4 ©	C632	D-4 Ⓕ	C643	D-4 Ⓕ	C654	C-3 Ⓕ	C668	C-7 ©	C2008	B-7 Ⓕ	C2019	B-5 Ⓕ	C2031	B-4 ©
		PS3002	C-6 Ⓕ	L2002	B-5 Ⓕ	L3201	C-6 ©	L3803	C-1 ©	LB3004	D-4 Ⓕ	X3003	C-4 Ⓕ	C608	D-3 Ⓕ	C619	D-3 Ⓕ	C633	D-5 ©	C644	D-2 Ⓕ	C655	C-3 Ⓕ	C669	C-7 ©	C2009	B-7 Ⓕ	C2020	B-5 Ⓕ	C2032	B-4 ©
FP3201	A-6 ©	JK3801	C-1 ©	L2003	A-2 ©	L3202	A-3 Ⓕ	L3901	A-2 Ⓕ	LB3005	D-5 Ⓕ			C609	D-4 Ⓕ	C620	C-4 ©	C634	C-5 ©	C645	D-2 Ⓕ	C656	D-3 Ⓕ	C671	D-7 ©	C2010	A-5 ©	C2021	B-3 ©	C2033	B-3 ©
FP4001	B-1 Ⓕ	**Coil**		L3002	D-3 ©	L3203	B-6 ©	L4001	B-1 Ⓕ	LB3006	D-5 Ⓕ	**Capacitor**		C610	D-3 Ⓕ	C621	C-4 ©	C635	D-3 Ⓕ	C646	C-2 Ⓕ	C657	C-3 Ⓕ	C672	C-1 Ⓕ	C2011	A-5 ©	C2023	B-4 Ⓕ	C2034	B-5 Ⓕ
FP6001	D-5 ©			L3003	B-3 ©	L3204	B-3 Ⓕ	L4201	B-6 ©	LB3007	D-2 ©			C611	D-3 Ⓕ	C622	C-4 ©	C636	D-2 Ⓕ	C647	C-3 Ⓕ	C658	C-3 Ⓕ	C2001	B-4 ©	C2012	A-2 ©	C2024	A-3 ©	C2035	A-7 Ⓕ
FP6002	A-7 Ⓕ	L601	C-5 ©	L3004	C-5 Ⓕ	L3205	B-2 Ⓕ	L4202	B-2 Ⓕ			C601	C-4 ©	C612	C-4 ©	C623	D-4 Ⓕ	C637	D-2 Ⓕ	C648	C-3 Ⓕ	C662	C-4 Ⓕ	C2002	B-3 ©	C2013	B-6 Ⓕ	C2025	A-3 ©	C2036	A-6 Ⓕ
P3001	C-1 ©	L602	B-4 ©	L3005	D-4 Ⓕ	L3206	B-3 Ⓕ	L4502	B-5 ©			C602	C-4 ©	C613	D-3 Ⓕ	C624	D-4 Ⓕ	C638	D-3 Ⓕ	C649	D-4 Ⓕ	C663	C-4 Ⓕ	C2003	B-4 ©	C2014	B-2 ©	C2026	B-6 Ⓕ	C2037	B-5 Ⓕ

ADDRESS INFORMATION ©...COMPONENT SIDE Ⓕ...FOIL SIDE

FOIL SIDE

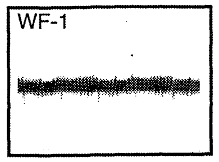

NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

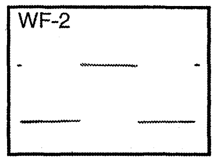
D
C
B
A
1
2
3
4
5
6
7
TO CAMERA MAIN C.B.A. (PP302)
TO FRONT C.B.A. (FP4801)
TO CAMERA MAIN C.B.A.(PP301)
TO REAR OPERATION C.B.A.(FP6701)
TO EVR
(FOIL SIDE)

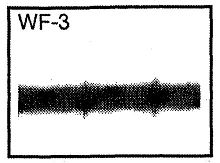
VTR MAIN C.B.A. (3)																							
C2038	B-5	Ⓕ	C3203	C-6	Ⓒ	C4001	A-2	Ⓕ	R603	C-6	Ⓒ	R2014	B-3	Ⓒ	R2103	A-2	Ⓒ	R3056	D-6	Ⓕ	R3842	C-5	Ⓕ
C2040	B-5	Ⓕ	C3204	C-6	Ⓒ	C4002	A-2	Ⓕ	R604	C-7	Ⓒ	R2015	A-5	Ⓕ	R2104	B-2	Ⓒ	R3057	B-2	Ⓕ	R3844	C-5	Ⓕ
C2041	B-4	Ⓒ	C3205	C-6	Ⓒ	C4003	B-6	Ⓒ	R605	C-4	Ⓒ	R2016	A-5	Ⓕ	R2106	B-3	Ⓒ	R3058	B-2	Ⓕ	R3845	B-6	Ⓕ
C2042	B-4	Ⓕ	C3206	C-6	Ⓒ	C4004	A-6	Ⓒ	R606	C-7	Ⓒ	R2017	B-5	Ⓕ	R2107	A-4	Ⓒ	R3059	B-2	Ⓕ	R4001	A-7	Ⓒ
C2199	B-4	Ⓕ	C3207	C-6	Ⓒ	C4005	B-6	Ⓒ	R607	C-7	Ⓒ	R2018	A-5	Ⓕ	R2108	A-3	Ⓒ	R3060	C-5	Ⓕ	R4002	A-2	Ⓕ
C3002	B-3	Ⓕ	C3208	B-6	Ⓒ	C4006	A-6	Ⓒ	R608	C-2	Ⓕ	R2019	A-5	Ⓕ	R2109	A-4	Ⓒ	R3061	B-2	Ⓕ	R4003	B-6	Ⓒ
C3003	D-4	Ⓕ	C3209	A-5	Ⓒ	C4007	B-7	Ⓒ	R609	C-2	Ⓕ	R2020	B-5	Ⓕ	R2110	A-4	Ⓒ	R3062	B-4	Ⓒ	R4004	A-6	Ⓒ
C3004	D-3	Ⓒ	C3210	A-3	Ⓕ	C4011	A-6	Ⓒ	R610	D-5	Ⓒ	R2021	B-5	Ⓕ	R2113	B-3	Ⓒ	R3075	D-4	Ⓕ	R4011	B-6	Ⓒ
C3005	D-3	Ⓒ	C3211	A-3	Ⓕ	C4012	B-2	Ⓕ	R611	D-5	Ⓒ	R2022	B-5	Ⓕ	R2114	B-3	Ⓒ	R3076	D-5	Ⓕ	R4012	A-6	Ⓒ
C3006	C-3	Ⓒ	C3212	A-3	Ⓕ	C4013	B-6	Ⓒ	R612	C-2	Ⓕ	R2023	A-3	Ⓒ	R2115	B-4	Ⓒ	R3078	D-5	Ⓕ	R4013	B-6	Ⓒ
C3007	D-4	Ⓒ	C3213	A-3	Ⓕ	C4014	A-6	Ⓒ	R613	C-1	Ⓕ	R2024	A-2	Ⓒ	R2116	B-5	Ⓕ	R3079	D-4	Ⓕ	R4014	A-6	Ⓒ
C3008	C-4	Ⓕ	C3214	B-3	Ⓕ	C4015	A-2	Ⓕ	R614	C-5	Ⓒ	R2025	A-2	Ⓒ	R2117	B-3	Ⓒ	R3083	C-2	Ⓕ	R4015	A-2	Ⓕ
C3009	C-4	Ⓕ	C3215	A-3	Ⓕ	C4016	A-2	Ⓕ	R615	C-4	Ⓒ	R2026	A-2	Ⓒ	R2118	A-3	Ⓒ	R3085	B-2	Ⓕ	R4016	A-2	Ⓕ
C3010	B-2	Ⓒ	C3216	B-3	Ⓕ	C4201	A-6	Ⓒ	R616	D-4	Ⓕ	R2027	A-4	Ⓕ	R2119	C-4	Ⓒ	R3086	C-4	Ⓒ	R4017	A-2	Ⓕ
C3011	C-2	Ⓒ	C3217	B-3	Ⓕ	C4202	B-6	Ⓒ	R617	C-3	Ⓕ	R2028	A-4	Ⓕ	R2121	A-5	Ⓕ	R3090	D-3	Ⓒ	R4018	A-2	Ⓕ
C3012	B-2	Ⓕ	C3218	B-3	Ⓕ	C4203	B-6	Ⓒ	R619	D-4	Ⓕ	R2029	A-5	Ⓕ	R2122	B-5	Ⓕ	R3091	D-3	Ⓒ	R4021	B-1	Ⓕ
C3013	C-2	Ⓕ	C3219	B-3	Ⓕ	C4204	B-6	Ⓒ	R621	D-4	Ⓒ	R2031	B-4	Ⓒ	R2123	A-5	Ⓕ	R3094	D-5	Ⓕ	R4022	A-7	Ⓒ
C3015	D-5	Ⓕ	C3220	B-3	Ⓕ	C4205	B-6	Ⓒ	R622	D-4	Ⓕ	R2033	B-5	Ⓕ	R2124	A-5	Ⓕ	R3203	B-3	Ⓕ	R4201	A-6	Ⓒ
C3016	C-3	Ⓒ	C3221	B-3	Ⓕ	C4206	B-6	Ⓒ	R623	D-4	Ⓒ	R2034	A-4	Ⓒ	R2125	A-5	Ⓕ	R3204	B-5	Ⓒ	R4202	A-6	Ⓒ
C3017	C-4	Ⓒ	C3222	B-3	Ⓕ	C4207	B-5	Ⓒ	R624	D-4	Ⓕ	R2035	B-6	Ⓕ	R2126	A-5	Ⓕ	R3205	B-2	Ⓕ	R4203	A-6	Ⓒ
C3018	D-5	Ⓕ	C3223	B-3	Ⓕ	C4208	B-5	Ⓒ	R625	D-4	Ⓕ	R2036	A-6	Ⓕ	R2127	A-3	Ⓒ	R3206	B-3	Ⓕ	R4204	A-6	Ⓒ
C3019	B-3	Ⓒ	C3224	B-6	Ⓒ	C4209	B-5	Ⓒ	R626	D-4	Ⓒ	R2037	A-4	Ⓒ	R2128	A-3	Ⓒ	R3207	B-2	Ⓕ	R4205	A-6	Ⓒ
C3020	D-3	Ⓒ	C3225	B-2	Ⓕ	C4210	B-5	Ⓒ	R629	D-4	Ⓕ	R2038	B-6	Ⓕ	R2129	B-4	Ⓒ	R3208	B-2	Ⓕ	R4211	B-6	Ⓒ
C3021	D-5	Ⓕ	C3226	B-3	Ⓕ	C4211	B-5	Ⓒ	R631	D-4	Ⓕ	R2039	B-6	Ⓕ	R2130	B-5	Ⓕ	R3209	A-2	Ⓕ	R4501	C-4	Ⓕ
C3022	D-5	Ⓕ	C3227	B-2	Ⓕ	C4212	B-4	Ⓕ	R634	C-4	Ⓒ	R2040	B-2	Ⓒ	R2133	B-5	Ⓕ	R3210	A-2	Ⓕ	R4502	B-3	Ⓕ
C3023	D-4	Ⓒ	C3228	B-2	Ⓕ	C4213	B-2	Ⓕ	R635	D-4	Ⓕ	R2041	B-4	Ⓕ	R2134	B-5	Ⓕ	R3211	A-2	Ⓕ	R4503	B-3	Ⓕ
C3024	D-6	Ⓕ	C3229	A-2	Ⓕ	C4214	B-5	Ⓒ	R636	D-4	Ⓕ	R2042	B-2	Ⓒ	R2135	D-7	Ⓕ	R3212	A-3	Ⓕ	R4504	B-4	Ⓕ
C3026	C-2	Ⓕ	C3230	A-2	Ⓕ	C4215	B-5	Ⓒ	R637	D-4	Ⓕ	R2043	A-3	Ⓒ	R2136	D-6	Ⓕ	R3213	C-5	Ⓒ	R4506	B-3	Ⓕ
C3027	D-3	Ⓒ	C3231	A-2	Ⓕ	C4218	A-5	Ⓒ	R638	C-3	Ⓒ	R2044	B-6	Ⓕ	R2137	D-6	Ⓕ	R3214	C-5	Ⓒ	R4507	B-4	Ⓕ
C3028	D-5	Ⓕ	C3232	A-2	Ⓕ	C4219	B-5	Ⓒ	R639	D-4	Ⓕ	R2045	B-6	Ⓕ	R2138	B-5	Ⓕ	R3215	A-4	Ⓕ	R4701	A-7	Ⓒ
C3030	D-5	Ⓕ	C3233	A-3	Ⓕ	C4501	C-4	Ⓕ	R640	C-5	Ⓒ	R2046	A-2	Ⓒ	R2139	B-2	Ⓒ	R3217	A-3	Ⓕ	R4702	A-7	Ⓒ
C3035	D-5	Ⓕ	C3234	A-2	Ⓕ	C4502	C-3	Ⓕ	R642	C-4	Ⓒ	R2047	B-4	Ⓒ	R2140	B-2	Ⓒ	R3218	A-3	Ⓕ	R4704	A-7	Ⓒ
C3036	D-4	Ⓕ	C3235	A-3	Ⓕ	C4503	C-3	Ⓕ	R644	C-4	Ⓒ	R2048	B-5	Ⓕ	R2141	B-5	Ⓕ	R3219	B-3	Ⓕ	R4705	A-7	Ⓒ
C3037	D-4	Ⓒ	C3236	A-3	Ⓕ	C4504	C-3	Ⓕ	R645	D-4	Ⓕ	R2049	A-5	Ⓕ	R2142	B-6	Ⓕ	R3220	A-2	Ⓕ	R4707	A-1	Ⓕ
C3038	D-5	Ⓕ	C3237	A-3	Ⓕ	C4505	C-3	Ⓕ	R646	D-4	Ⓕ	R2050	B-4	Ⓒ	R2143	B-1	Ⓒ	R3221	A-2	Ⓕ	R4708	A-1	Ⓕ
C3039	D-4	Ⓕ	C3238	A-5	Ⓒ	C4506	C-3	Ⓕ	R647	D-4	Ⓕ	R2052	A-5	Ⓕ	R2199	B-4	Ⓕ	R3222	C-6	Ⓒ	R4709	A-1	Ⓕ
C3040	D-3	Ⓒ	C3239	B-3	Ⓕ	C4507	C-3	Ⓕ	R648	C-4	Ⓕ	R2053	A-5	Ⓕ	R3001	D-3	Ⓒ	R3223	C-5	Ⓒ	R4710	A-1	Ⓕ
C3041	D-3	Ⓒ	C3240	B-3	Ⓕ	C4508	C-3	Ⓕ	R649	C-4	Ⓕ	R2054	B-2	Ⓒ	R3002	D-2	Ⓒ	R3224	B-3	Ⓕ	R4711	A-1	Ⓕ
C3042	D-5	Ⓕ	C3241	B-3	Ⓕ	C4509	B-4	Ⓕ	R650	C-4	Ⓕ	R2055	B-3	Ⓒ	R3003	B-4	Ⓒ	R3225	A-5	Ⓒ	R4712	A-1	Ⓕ
C3043	C-5	Ⓕ	C3242	B-3	Ⓕ	C4510	B-4	Ⓕ	R651	C-3	Ⓕ	R2056	B-4	Ⓒ	R3004	D-5	Ⓕ	R3226	B-3	Ⓕ	R4798	A-1	Ⓕ
C3044	C-5	Ⓕ	C3243	C-3	Ⓕ	C4511	B-3	Ⓕ	R652	C-3	Ⓕ	R2057	B-2	Ⓒ	R3005	B-1	Ⓕ	R3227	A-2	Ⓕ	R4799	A-2	Ⓕ
C3045	C-3	Ⓒ	C3244	B-3	Ⓕ	C4512	C-3	Ⓕ	R653	C-3	Ⓕ	R2058	A-2	Ⓒ	R3006	D-4	Ⓕ	R3228	C-6	Ⓒ	R6503	C-7	Ⓒ
C3046	C-5	Ⓕ	C3245	A-2	Ⓕ	C4513	B-5	Ⓒ	R656	D-3	Ⓕ	R2059	A-5	Ⓕ	R3008	D-5	Ⓕ	R3229	B-7	Ⓒ	R6504	A-2	Ⓒ
C3047	C-5	Ⓕ	C3246	B-2	Ⓕ	C4514	B-4	Ⓒ	R657	C-4	Ⓒ	R2060	A-2	Ⓒ	R3009	D-5	Ⓕ	R3230	B-2	Ⓕ	R6505	B-6	Ⓕ
C3048	C-3	Ⓒ	C3247	A-3	Ⓕ	C4515	B-4	Ⓕ	R658	D-3	Ⓕ	R2061	A-3	Ⓒ	R3010	D-5	Ⓕ	R3231	A-5	Ⓒ	R6506	A-6	Ⓕ
C3050	C-3	Ⓒ	C3248	A-3	Ⓕ	C4701	A-1	Ⓕ	R659	C-2	Ⓕ	R2062	A-2	Ⓒ	R3011	D-5	Ⓕ	R3232	A-3	Ⓕ	R6510	A-5	Ⓕ
C3051	C-3	Ⓒ	C3249	B-3	Ⓕ	C4702	A-1	Ⓕ	R661	D-3	Ⓕ	R2063	A-3	Ⓒ	R3012	D-5	Ⓕ	R3233	B-3	Ⓕ	R6515	A-6	Ⓕ
C3053	C-3	Ⓒ	C3250	B-5	Ⓕ	C4704	A-7	Ⓒ	R663	D-3	Ⓕ	R2064	A-3	Ⓒ	R3013	D-5	Ⓕ	R3234	A-2	Ⓕ	**Resistor Array**		
C3054	C-3	Ⓒ	C3251	B-3	Ⓕ	C4705	A-2	Ⓕ	R664	D-2	Ⓕ	R2065	A-3	Ⓒ	R3014	C-3	Ⓒ	R3235	A-4	Ⓕ			
C3055	C-3	Ⓒ	C3252	B-3	Ⓕ	C4706	A-2	Ⓕ	R665	D-2	Ⓕ	R2066	A-5	Ⓕ	R3016	D-3	Ⓒ	R3236	A-4	Ⓕ	RA2001	B-4	Ⓒ
C3056	D-5	Ⓕ	C3253	B-3	Ⓕ	C4798	A-2	Ⓕ	R666	D-2	Ⓕ	R2067	A-5	Ⓕ	R3017	B-3	Ⓒ	R3237	A-5	Ⓒ	RA2002	B-5	Ⓕ
C3057	D-5	Ⓕ	C3254	B-6	Ⓒ	C4799	A-2	Ⓕ	R667	D-2	Ⓕ	R2068	B-4	Ⓒ	R3018	D-7	Ⓕ	R3238	B-2	Ⓕ	RA2003	B-4	Ⓒ
C3058	D-3	Ⓒ	C3255	C-5	Ⓒ	C6501	D-6	Ⓕ	R673	C-3	Ⓕ	R2069	B-2	Ⓒ	R3019	C-2	Ⓕ	R3239	B-2	Ⓕ	RA2005	B-4	Ⓒ
C3060	D-3	Ⓒ	C3256	B-5	Ⓒ	C6502	C-7	Ⓒ	R674	C-3	Ⓕ	R2070	B-6	Ⓕ	R3020	C-3	Ⓒ	R3240	B-2	Ⓕ	RA2006	A-4	Ⓒ
C3061	D-3	Ⓒ	C3257	B-3	Ⓕ	C6503	C-6	Ⓒ	R675	C-3	Ⓕ	R2072	C-4	Ⓒ	R3022	D-4	Ⓕ	R3241	A-2	Ⓕ	RA2007	B-4	Ⓒ
C3065	B-2	Ⓒ	C3258	B-6	Ⓒ	C6504	A-1	Ⓒ	R680	D-3	Ⓕ	R2073	B-4	Ⓒ	R3023	D-5	Ⓕ	R3242	A-3	Ⓕ	RA2008	B-4	Ⓒ
C3066	C-3	Ⓒ	C3259	A-3	Ⓕ	C6507	A-2	Ⓒ	R681	C-3	Ⓕ	R2074	B-4	Ⓒ	R3024	D-4	Ⓕ	R3243	A-4	Ⓕ	RA2011	A-3	Ⓒ
C3067	B-2	Ⓒ	C3261	A-5	Ⓒ	**Resistor**			R682	D-3	Ⓕ	R2076	A-5	Ⓕ	R3027	C-5	Ⓕ	R3244	B-3	Ⓕ	RA2012	A-4	Ⓒ
C3071	B-3	Ⓒ	C3262	B-5	Ⓒ				R683	C-3	Ⓕ	R2077	A-5	Ⓕ	R3028	C-5	Ⓕ	R3245	B-3	Ⓕ	RA2013	A-6	Ⓕ
C3072	B-3	Ⓒ	C3264	A-4	Ⓕ	R507	C-2	Ⓕ	R685	C-3	Ⓕ	R2078	B-4	Ⓒ	R3030	C-5	Ⓕ	R3247	A-3	Ⓕ	RA2014	A-2	Ⓒ
C3073	C-4	Ⓒ	C3265	A-3	Ⓕ	R508	C-2	Ⓕ	R690	C-3	Ⓕ	R2079	B-4	Ⓒ	R3031	C-5	Ⓕ	R3248	B-5	Ⓒ	RA2016	B-5	Ⓕ
C3074	C-4	Ⓕ	C3802	B-6	Ⓕ	R509	C-2	Ⓕ	R691	C-3	Ⓕ	R2080	A-4	Ⓒ	R3032	C-5	Ⓕ	R3249	A-3	Ⓕ	RA2018	A-6	Ⓕ
C3075	C-5	Ⓕ	C3803	B-6	Ⓕ	R510	D-4	Ⓕ	R692	C-5	Ⓒ	R2081	B-4	Ⓕ	R3033	C-5	Ⓕ	R3251	A-3	Ⓕ	RA2023	A-4	Ⓒ
C3076	B-5	Ⓕ	C3804	B-5	Ⓕ	R511	D-2	Ⓕ	R693	C-3	Ⓕ	R2082	B-4	Ⓕ	R3034	C-3	Ⓒ	R3252	A-3	Ⓕ	RA2024	A-5	Ⓕ
C3077	C-5	Ⓕ	C3806	B-7	Ⓕ	R512	D-2	Ⓕ	R694	C-2	Ⓕ	R2083	B-5	Ⓕ	R3035	C-5	Ⓕ	R3254	B-3	Ⓕ	RA3803	B-7	Ⓕ
C3078	C-4	Ⓕ	C3807	C-7	Ⓕ	R513	D-4	Ⓕ	R695	C-2	Ⓕ	R2085	A-2	Ⓒ	R3036	C-2	Ⓕ	R3255	B-3	Ⓕ	RA3804	C-6	Ⓕ
C3079	C-4	Ⓕ	C3808	C-7	Ⓕ	R521	C-1	Ⓕ	R696	C-2	Ⓕ	R2087	B-4	Ⓒ	R3037	D-4	Ⓕ	R3801	B-6	Ⓕ	RA3805	C-6	Ⓕ
C3080	C-2	Ⓕ	C3809	C-7	Ⓕ	R522	C-1	Ⓕ	R697	C-3	Ⓕ	R2088	A-5	Ⓕ	R3038	D-5	Ⓕ	R3803	B-7	Ⓕ	RA3806	B-5	Ⓕ
C3081	C-2	Ⓕ	C3813	C-6	Ⓕ	R523	B-1	Ⓕ	R698	C-3	Ⓕ	R2089	A-3	Ⓒ	R3039	D-4	Ⓕ	R3804	C-7	Ⓕ	RA3807	B-6	Ⓕ
C3083	C-2	Ⓕ	C3814	C-6	Ⓕ	R524	B-1	Ⓕ	R699	C-3	Ⓕ	R2090	A-2	Ⓒ	R3041	D-3	Ⓒ	R3805	C-7	Ⓕ	RA3808	B-6	Ⓕ
C3084	B-2	Ⓕ	C3816	C-6	Ⓕ	R525	B-1	Ⓕ	R2002	B-4	Ⓒ	R2091	B-3	Ⓒ	R3042	D-3	Ⓒ	R3806	C-7	Ⓕ	RA3809	B-6	Ⓕ
C3086	B-2	Ⓕ	C3817	C-6	Ⓕ	R526	A-1	Ⓕ	R2003	B-4	Ⓕ	R2092	A-2	Ⓒ	R3044	D-3	Ⓒ	R3807	C-7	Ⓕ	RA4001	B-2	Ⓕ
C3088	B-2	Ⓕ	C3818	C-6	Ⓕ	R527	C-1	Ⓕ	R2004	B-4	Ⓒ	R2093	A-4	Ⓒ	R3046	D-5	Ⓕ	R3809	C-6	Ⓕ			
C3089	C-2	Ⓕ	C3820	C-5	Ⓕ	R528	C-1	Ⓕ	R2005	A-4	Ⓒ	R2095	A-4	Ⓒ	R3048	C-5	Ⓕ	R3811	C-7	Ⓕ			
C3090	B-2	Ⓕ	C3822	B-5	Ⓕ	R529	C-7	Ⓒ	R2006	A-3	Ⓒ	R2096	B-4	Ⓕ	R3049	C-5	Ⓕ	R3812	C-7	Ⓕ			
C3091	B-2	Ⓕ	C3824	C-6	Ⓕ	R530	C-7	Ⓒ	R2007	A-3	Ⓒ	R2097	B-4	Ⓕ	R3050	C-5	Ⓕ	R3813	C-7	Ⓕ			
C3092	B-2	Ⓕ	C3825	C-7	Ⓕ	R531	D-1	Ⓕ	R2008	A-3	Ⓒ	R2098	B-4	Ⓒ	R3051	C-5	Ⓕ	R3814	C-7	Ⓕ			
C3094	B-2	Ⓒ	C3826	B-7	Ⓕ	R532	D-1	Ⓕ	R2009	A-4	Ⓒ	R2099	B-4	Ⓒ	R3052	C-5	Ⓕ	R3815	C-7	Ⓕ			
C3096	C-2	Ⓒ	C3827	C-5	Ⓕ	R600	C-4	Ⓕ	R2011	A-5	Ⓕ	R2100	A-4	Ⓒ	R3053	C-4	Ⓕ	R3816	C-7	Ⓕ			
C3201	C-6	Ⓒ	C3901	A-2	Ⓕ	R601	C-2	Ⓕ	R2012	B-4	Ⓒ	R2101	A-4	Ⓒ	R3054	C-4	Ⓕ	R3834	B-5	Ⓕ			
C3202	C-6	Ⓒ	C3902	A-2	Ⓕ	R602	C-6	Ⓒ	R2013	B-3	Ⓒ	R2102	A-2	Ⓒ	R3055	D-6	Ⓕ	R3841	B-6	Ⓕ			

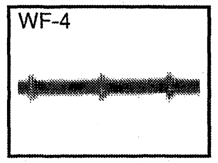
ADDRESS INFORMATION Ⓒ... COMPONENT SIDE Ⓕ... FOIL SIDE

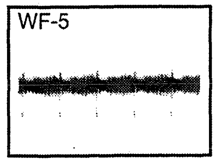
Back Page:
VTR MAIN C.B.A. Section

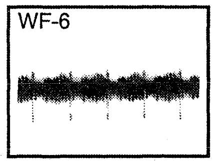

WF-1

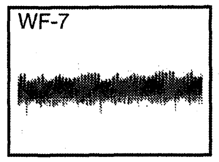

WF-2

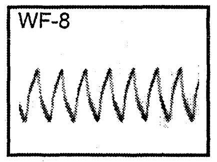

WF-3

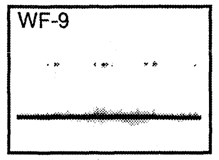

WF-4

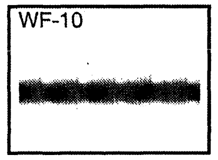

WF-5

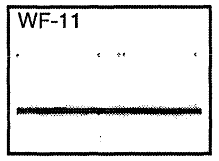

WF-6

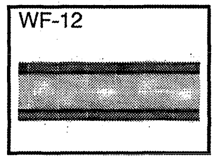

WF-7

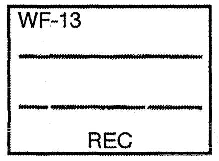

WF-8

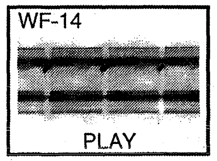

WF-9

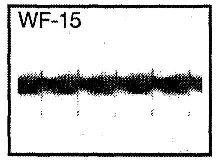

WF-10

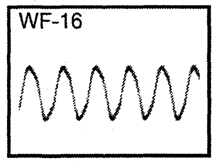

WF-11


WF-12


WF-13


WF-14


WF-15


WF-16

Checking Point of the CSP IC3801

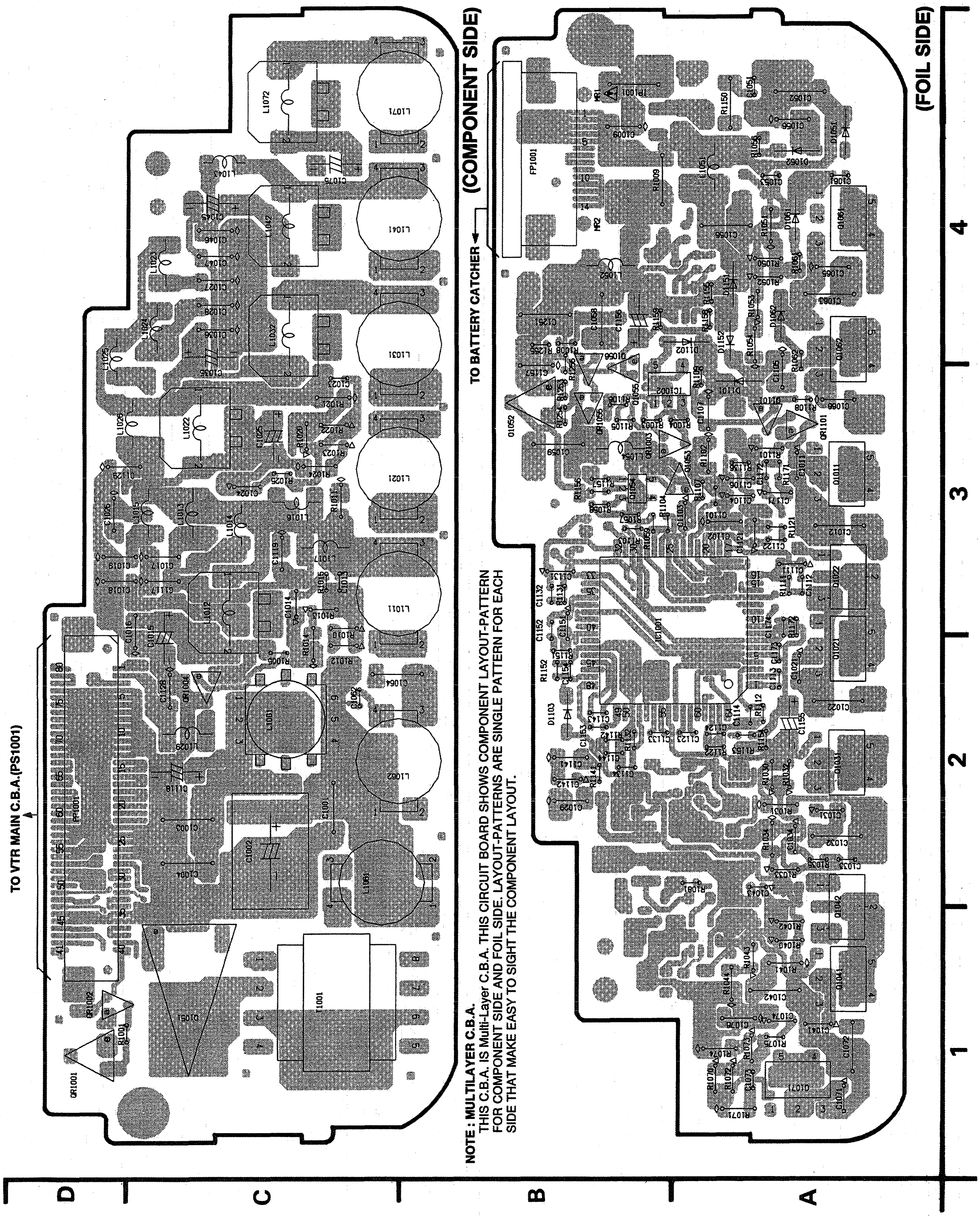
CSP IC3801		CHECK POINT		WF No.	REMARKS
PIN	NAME				
1	GND	GND	—	—	
2	ADB5	RA3807-2	B-11	—	GND
3	ADB4	RA3807-4	B-11	—	GND
4	ADB3	RA3807-6	B-11	—	GND
5	ADB2	RA3807-8	B-11	—	GND
6	VCC	—	—	—	DIF 3V
7	ADB1	RA3808-2	B-11	—	GND
8	ADB0	RA3808-4	B-11	—	GND
9	ADEN	R3841 - (UPPER)	B-6	—	GND
10	BKRDY	—	—	—	
11	GND	GND	—	—	
12	UPPEN	—	—	—	
13	CYCLD	—	—	—	
14	CYCLS	GND	—	—	
15	CLK25	—	—	—	
16	VCC	—	—	—	DIF 3V
17	/RST	R3803 - (UPPER)	B-6	WF-1	VTR MAIN C.B.A. (F)
18	FRP	IC3001-58	D-3	WF-2	VTR MAIN C.B.A. (C)
19	VFRP	R3845 - (UPPER)	B-6	WF-3	VTR MAIN C.B.A. (F)
20	TEST0	GND	—	—	
21	GND	GND	—	—	
22	TEST1	GND	—	—	
23	SI/TEST2	GND	—	—	
24	SO	—	—	—	
25	SCK	—	—	—	
26	VCC	—	—	—	DIF 3V
27	/SEN	—	—	—	
28	TMS	IC3001-147	B-2	WF-4	VTR MAIN C.B.A. (C)
29	TCK	IC3001-148	B-2	WF-4	
30	/TRST	R3803 - (UPPER)	B-2	WF-1	VTR MAIN C.B.A. (F)
31	GND	GND	—	—	
32	TDI	PP3001-51	A-5	WF-4	VTR MAIN C.B.A. (F)
33	TDO	IC3201-144	B-5	WF-5	VTR MAIN C.B.A. (C)
34	/LISO	R3801 - (UPPER)	B-6	WF-6	VTR MAIN C.B.A. (F)
35	LLREC	—	—	—	
36	VCC	—	—	—	DIF 3V
37	LD3	RA3809-3	B-12	—	GND
38	LD2	RA3809-1	B-12	—	GND
39	LD1	—	—	—	
40	LD0	—	—	—	
41	LCTL1	—	—	—	
42	LCTL0	—	—	—	
43	LSYSCLK	—	—	—	
44	VCC	—	—	—	DIF 3V
45	GND	GND	—	—	
46	D GND	GND	—	—	
47	D VCC	—	—	—	DIF 3V
48	PC0	RA3803-3	B-12	—	GND

VTR MAIN C.B.A. (C): COMPONENT SIDE/(F): FOIL SIDE

CSP IC3801		CHECK POINT		WF No.	REMARKS
PIN	NAME				
49	PC1	RA3803-1	B-12	—	GND
50	PC2	R3804 - (LOWER)	B-6	WF-5	VTR MAIN C.B.A. (F)
51	LREQ	—	—	—	
52	CTL0	—	—	—	
53	CTL1	—	—	—	
54	D0	—	—	—	
55	D1	—	—	—	
56	SYSCLK	—	—	—	
57	D VCC	—	—	—	DIF 3V
58	D GND	GND	—	—	
59	A GND	GND	—	—	
60	A GND	GND	—	—	
61	TP BIAS	C3807 - (LEFT)	C-6	WF-4	VTR MAIN C.B.A. (F)
62	A GND	GND	—	—	
63	A GND	GND	—	—	
64	A VCC	C3809 - (LEFT)	C-6	WF-4	VTR MAIN C.B.A. (F)
65	A VCC	—	—	—	DIF 3V
66	CPS	R3806 - (LEFT)	C-6	WF-7	VTR MAIN C.B.A. (F)
67	R1	R3815 - (LEFT)	C-6	WF-4	
68	R0	R3807 - (LEFT)	C-6	WF-4	
69	TPB–	R3814 - (LEFT)	C-7	WF-4	
70	TPB+	R3813 - (LEFT)	C-7	WF-4	
71	TPA–	R3812 - (UPPER)	C-6	WF-4	
72	TPA+	R3811 - (UPPER)	C-6	WF-4	
73	XO	—	—	—	
74	XI	C3827 - (RIGHT)	C-5	WF-8	VTR MAIN C.B.A. (F)
75	PLL GND	GND	—	—	
76	PLL GND	GND	—	—	
77	PLL VDD	—	—	—	DIF 3V
78	PLL FLT	C3813 - (LOWER)	C-6	WF-4	VTR MAIN C.B.A. (F)
79	PWRDN	—	—	—	
80	AVCC	—	—	—	DIF 3V
81	/ISO	R3809 - (LOWER)	C-6	—	
82	/RESET	IC3201-84	C-5	WF-4	VTR MAIN C.B.A. (C)
83	TESTM2	RA3805-3	C-6	—	
84	TESTM1	RA3805-1	C-6	—	
85	CNA	—	—	—	
86	LPS	RA3804-3	C-6	—	
87	C/LKON	RA3804-1	C-6	—	
88	DVSS	GND	—	—	
89	GND	GND	—	—	
90	VCC	—	—	—	DIF 3V
91	LPWRDN	—	—	—	
92	LCNA	—	—	—	
93	RAMEZ	GND	—	—	
94	NTCLK	GND	—	—	
95	GND	GND	—	—	
96	NTOUT	—	—	—	

CSP IC3801		CHECK POINT		WF No.	REMARKS
PIN	NAME				
97	NTZIHZ	GND	—	—	
98	CYCLEIN	GND	—	—	
99	/INTP	IC2001-88	A-3	WF-4	VTR MAIN C.B.A. (C)
100	VCC	—	—	—	DIF 3V
101	VCCA (2/3)	—	—	—	REG D2V
102	AD15	IC2001-154	B-4	WF-9	VTR MAIN C.B.A. (C)
103	AD14	IC2001-153	B-4	WF-9	
104	AD13	IC2001-152	B-4	WF-9	
105	AD12	IC2001-151	B-4	WF-9	
106	GND	GND	—	—	
107	AD11	IC2001-150	B-4	WF-9	VTR MAIN C.B.A. (C)
108	AD10	IC2001-149	B-4	WF-9	
109	AD9	IC2001-148	B-4	WF-9	
110	AD8	IC2001-147	B-4	WF-9	
111	VCCA (2/3)	—	—	—	REG D 2V
112	AD7	IC2001-146	B-4	WF-9	VTR MAIN C.B.A. (C)
113	AD6	IC2001-145	B-4	WF-9	
114	AD5	IC2001-144	B-4	WF-9	
115	AD4	IC2001-143	B-4	WF-9	
116	GND	GND	—	—	
117	AD3	IC2001-142	B-4	WF-9	VTR MAIN C.B.A. (C)
118	AD2	IC2001-141	B-4	WF-9	
119	AD1	IC2001-140	B-4	WF-9	
120	AD0	IC2001-139	B-4	WF-9	
121	GND	GND	—	—	
122	/LCNTD	R3842 - (LOWER)	C-5	WF-10	VTR MAIN C.B.A. (F)
123	/RD	—	—	—	
124	ALE	IC2001-135	A-4	WF-11	VTR MAIN C.B.A. (C)
125	/DC	IC2001-133	A-4	WF-11	
126	BCLK	IC2001-132	A-4	WF-12	
127	VCCB (2/3)	—	—	—	REG D 2V
128	VCC	—	—	—	DIF 3V
129	VCCB (2/3)	—	—	—	REG D 2V
130	AD15/DBA0	IC3201-151	B-5	WF-13,14	VTR MAIN C.B.A. (C)
131	AD14/DBA1	IC3201-152	B-5	WF-13,14	
132	AD13/DBA2	IC3201-153	B-5	WF-13,14	
133	AD12/DBA3	IC3201-154	B-5	WF-13,14	
134	ADB11/SMPA	IC3201-155	B-5	WF-13,14	
135	GND	GND	—	—	
136	ADB10/DBB0	RA3806-2	B-11	—	GND
137	ADB9/DBB1	RA3806-4	B-11	—	GND
138	ADB8/DBB2	RA3806-6	B-11	—	GND
139	ADB7/DBB3	RA3806-8	B-11	—	GND
140	ADB6/SMPB	R3834 - (RIGHT)	B-5	WF-15	VTR MAIN C.B.A. (F)
141	VCCB (2/3)	—	—	—	REG D 2V
142	CLK18	IC3201-3	B-6	WF-16	VTR MAIN C.B.A. (C)
143	VCC	—	—	—	DIF 3V
144	SSP	IC3201-148	B-5	WF-4	VTR MAIN C.B.A. (C)

3-39. POWER C.B.A. (VEP01801C)


TO VTR MAIN C.B.A.(PS1001)
(COMPONENT SIDE)
TO BATTERY CATCHER
(FOIL SIDE)
FP1001
IC1001
IC1002
T1001
L1071
L1041
L1031
L1021
L1011
L1061
L1062
L1091
QR1001
QR1002
QR1004
A
B
C
D
1
2
3
4

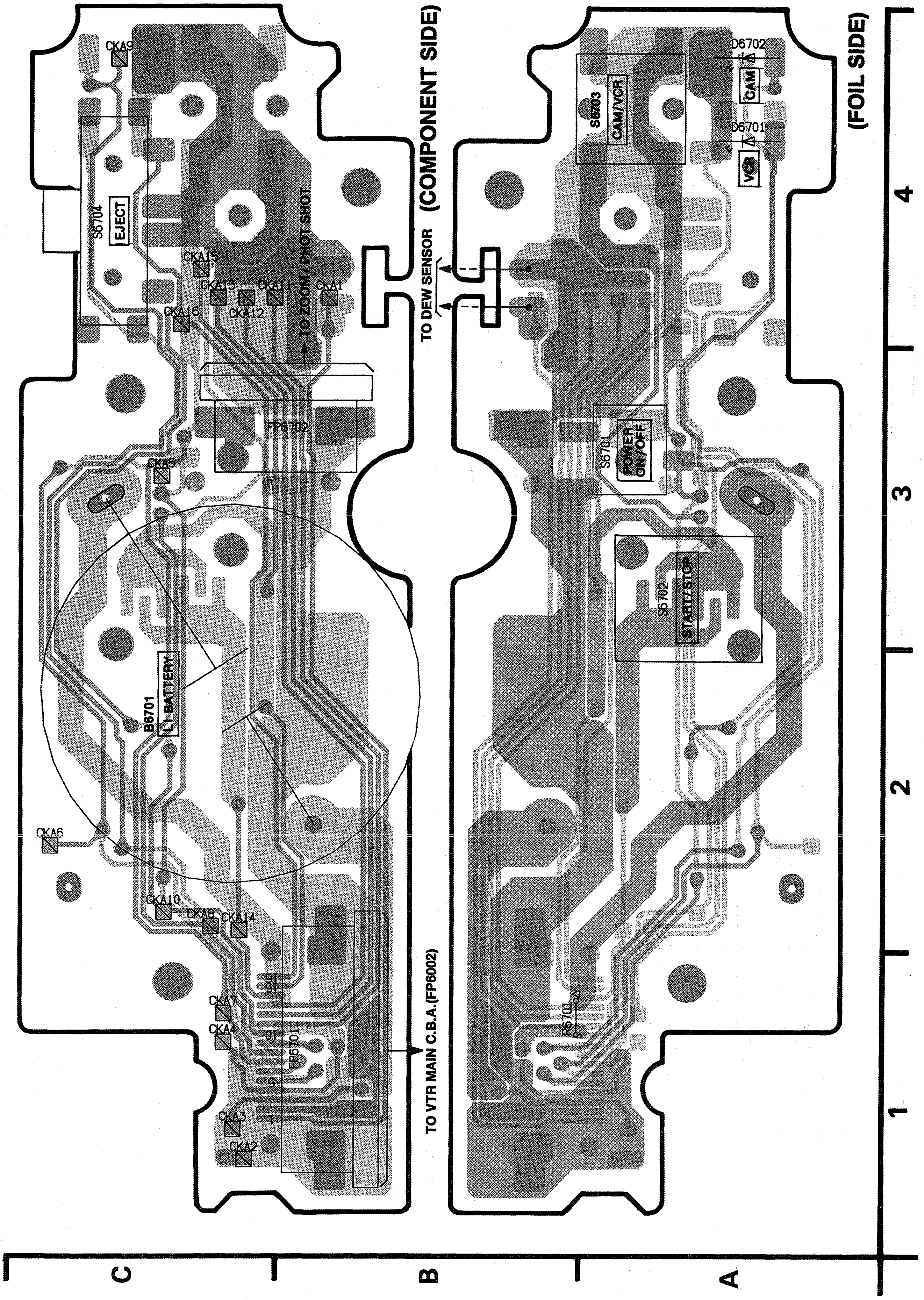
NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

POWER C.B.A.

Integrated Circuit	
IC1001	B-3
IC1002	B-3
Transistor	
Q1011	A-3
Q1021	A-2
Q1022	A-3
Q1031	A-2
Q1041	A-1
Q1042	A-1
Q1051	C-1
Q1052	B-3
Q1053	A-3
Q1054	B-3
Q1055	B-3
Q1056	B-4
Q1061	A-4
Q1062	A-4
Q1071	A-1
Q1101	A-3
Transistor & Resistor	
QR1001	D-1
QR1002	D-1
QR1003	B-3
QR1004	C-2
QR1055	B-3
QR1101	A-3
Diode	
D1051	A-4
D1052	A-4
D1061	A-4
D1062	A-4
D1101	A-3
D1102	A-4
D1103	B-2
D1151	A-4
D1152	A-4
Connector	
FP1001	B-4
PP1001	D-2
IP	
IP1001	B-4
Transformer	
T1001	C-1
Coil	
L1001	C-2
L1011	C-3
L1012	C-3
L1013	C-3
L1014	C-3
L1015	C-3
L1016	C-3
L1017	C-3
L1021	C-3
L1022	C-3
L1023	C-4
L1024	D-4
L1025	D-4
L1026	C-3
L1029	C-2
L1031	C-4
L1032	C-4
L1041	C-4
L1042	C-4
L1043	C-4
L1051	A-4
L1052	B-4
L1054	B-3
L1061	C-2
L1062	C-2
L1071	C-4
L1072	C-4
Capacitor	
C1001	C-2
C1002	C-2
C1003	C-2
C1004	C-2
C1009	B-4
C1011	A-3
C1012	A-3
C1013	C-3
C1014	C-3
C1015	C-2
C1016	C-2
C1017	C-3
C1018	D-3
C1019	D-3
C1021	A-2
C1022	A-2
C1023	C-3
C1024	C-3
C1025	C-3
C1026	D-3
C1027	C-4
C1028	C-4
C1029	B-2
C1031	A-2
C1032	A-2
C1033	A-2
C1034	A-2
C1035	C-3
C1036	C-4
C1041	A-1
C1042	A-1
C1043	A-2
C1045	C-4
C1046	C-4
C1047	C-4
C1051	A-4
C1052	A-4
C1053	A-4
C1055	A-4
C1056	A-4
C1058	B-4
C1059	B-3
C1061	A-4
C1062	C-2
C1063	A-4
C1064	C-2
C1065	A-4
C1066	A-3
C1071	A-1
C1072	A-1
C1073	A-1
C1074	A-1
C1075	C-4
C1076	A-1
C1101	A-3
C1102	A-3
C1103	A-3
C1104	A-3
C1105	A-3
C1106	A-3
C1107	A-3
C1111	A-3
C1112	A-3
C1113	A-2
C1114	A-2
C1117	C-3
C1118	C-2
C1119	C-3
C1121	A-3
C1122	A-3
C1123	A-2
C1124	A-2
C1128	C-2
C1129	D-3
C1131	B-3
C1132	B-3
C1133	B-2
C1134	B-2
C1141	B-2
C1142	B-2
C1143	B-2
C1144	B-2
C1151	B-3
C1152	B-3
C1153	B-2
C1154	B-2
C1155	A-2
C1156	B-4
C1157	B-3
C1171	A-3
C1172	A-3
C1173	A-2
C1174	A-3
C1251	B-4
Resistor	
R1001	D-1
R1003	B-3
R1004	B-3
R1005	C-2
R1008	B-4
R1009	B-4
R1010	C-3
R1011	C-3
R1012	C-2
R1013	C-3
R1014	C-2
R1015	C-3
R1020	C-3
R1021	C-3
R1022	C-3
R1023	C-3
R1024	C-3
R1025	C-3
R1030	A-2
R1031	A-2
R1032	A-2
R1033	A-2
R1034	A-2
R1035	A-2
R1040	A-1
R1041	A-1
R1042	A-1
R1043	A-1
R1044	A-1
R1050	A-4
R1051	A-4
R1052	A-4
R1053	A-4
R1054	A-4
R1056	A-4
R1057	B-3
R1058	B-3
R1059	B-3
R1061	A-4
R1062	A-4
R1070	A-1
R1071	A-1
R1072	A-1
R1073	A-1
R1074	A-1
R1075	A-1
R1081	A-2
R1101	A-3
R1102	A-3
R1103	B-3
R1104	B-3
R1105	B-3
R1106	B-3
R1107	A-3
R1108	A-3
R1109	A-3
R1111	A-3
R1112	A-2
R1121	A-3
R1122	A-2
R1131	B-3
R1132	B-2
R1136	A-3
R1141	B-2
R1142	B-2
R1150	A-4
R1151	B-2
R1152	B-2
R1153	A-2
R1154	A-2
R1155	A-4
R1156	B-3
R1157	B-3
R1158	A-4
R1159	B-4
R1172	A-3
R1253	B-3
R1254	B-3
R1255	B-4
R1256	B-3

ADDRESS INFORMATION

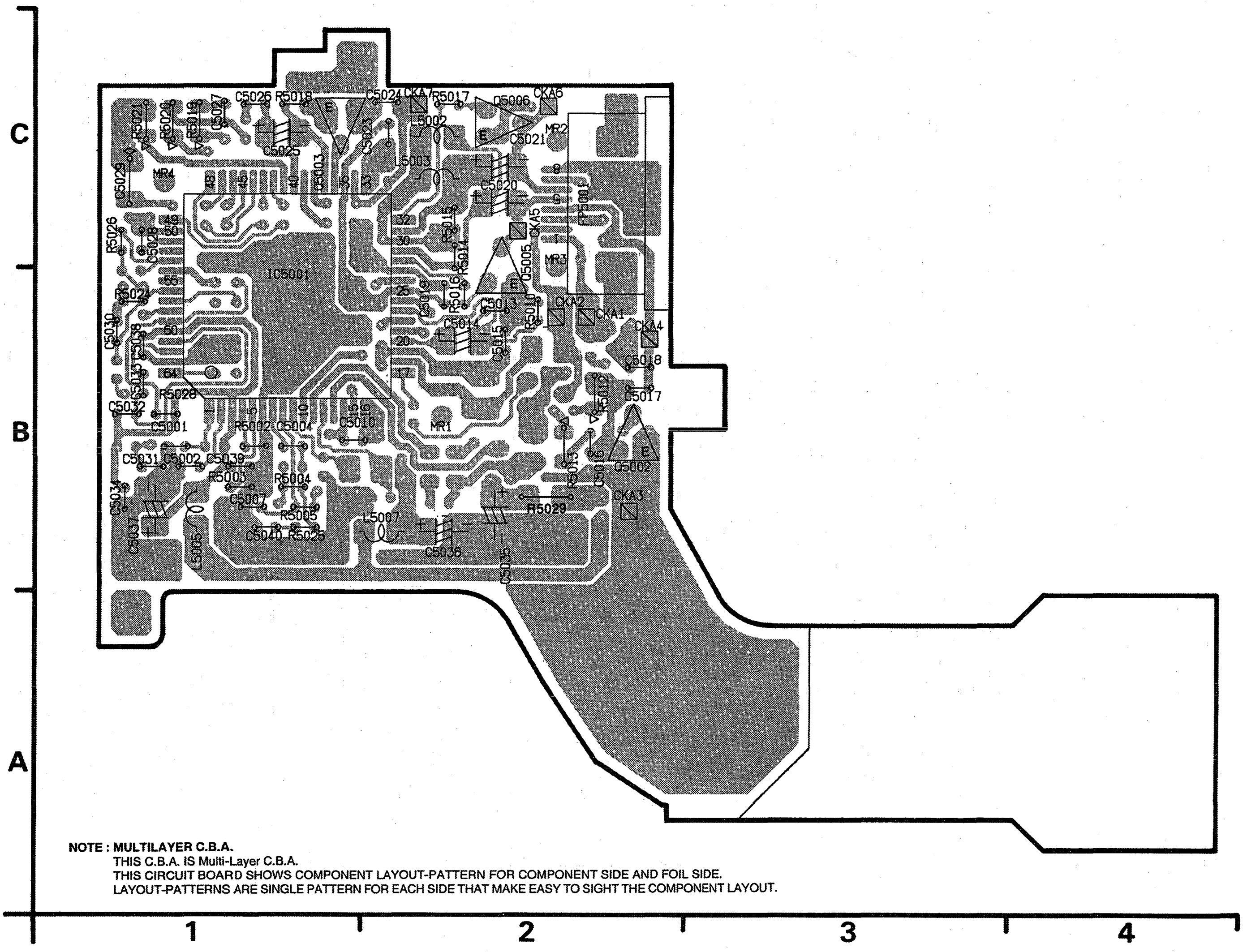
3-40. REAR OPERATION C.B.A. (VEP06C37A)


(COMPONENT SIDE)
(FOIL SIDE)
CKA9
S6704
EJECT
CKA15
CKA13
CKA11
CKA1
CKA12
CKA16
TO ZOOM / PHOT SHOT
TO DEW SENSOR
FP6702
CKA5
B6701
LI-BATTERY
CKA6
CKA10
CKA8
CKA14
CKA7
CKA4
FP6701
CKA3
CKA2
TO VTR MAIN C.B.A.(FP6002)
S6703
CAM/VCR
D6702
CAM
D6701
VCR
S6701
POWER ON/OFF
S6702
START/STOP
R6701
4
3
2
1
C
B
A

3-41. HEAD AMP C.B.A. (VEP05352A)

HEAD/REC AMP C.B.A.									
Integrated Circuit		L5003	C-2	C5018	B-2	C5034	B-1	R5013	B-2
IC5001	B-1	L5005	B-1	C5019	B-2	C5035	B-2	R5014	C-2
		L5007	B-2	C5020	C-2	C5036	B-2	R5015	C-2
Transistor		**Capacitor**		C5021	C-2	C5037	B-1	R5016	B-2
				C5023	C-2	C5038	B-1	R5017	C-2
Q5002	B-2	C5001	B-1	C5024	C-2	C5039	B-1	R5018	C-1
Q5003	C-1	C5002	B-1	C5025	C-1	C5040	B-1	R5019	C-1
Q5005	B-2	C5004	B-1	C5026	C-1	**Resistor**		R5020	C-1
Q5006	C-2	C5007	B-1	C5027	C-1			R5021	C-1
Connector		C5010	B-1	C5028	C-1	R5002	B-1	R5024	B-1
FP5001	C-2	C5013	B-2	C5029	C-1	R5003	B-1	R5025	B-1
		C5014	B-2	C5030	B-1	R5004	B-1	R5026	C-1
Coil		C5015	B-2	C5031	B-1	R5005	B-1	R5028	B-1
		C5016	B-2	C5032	B-1	R5010	B-2	R5029	B-2
L5002	C-2	C5017	B-2	C5033	B-1	R5012	B-2		

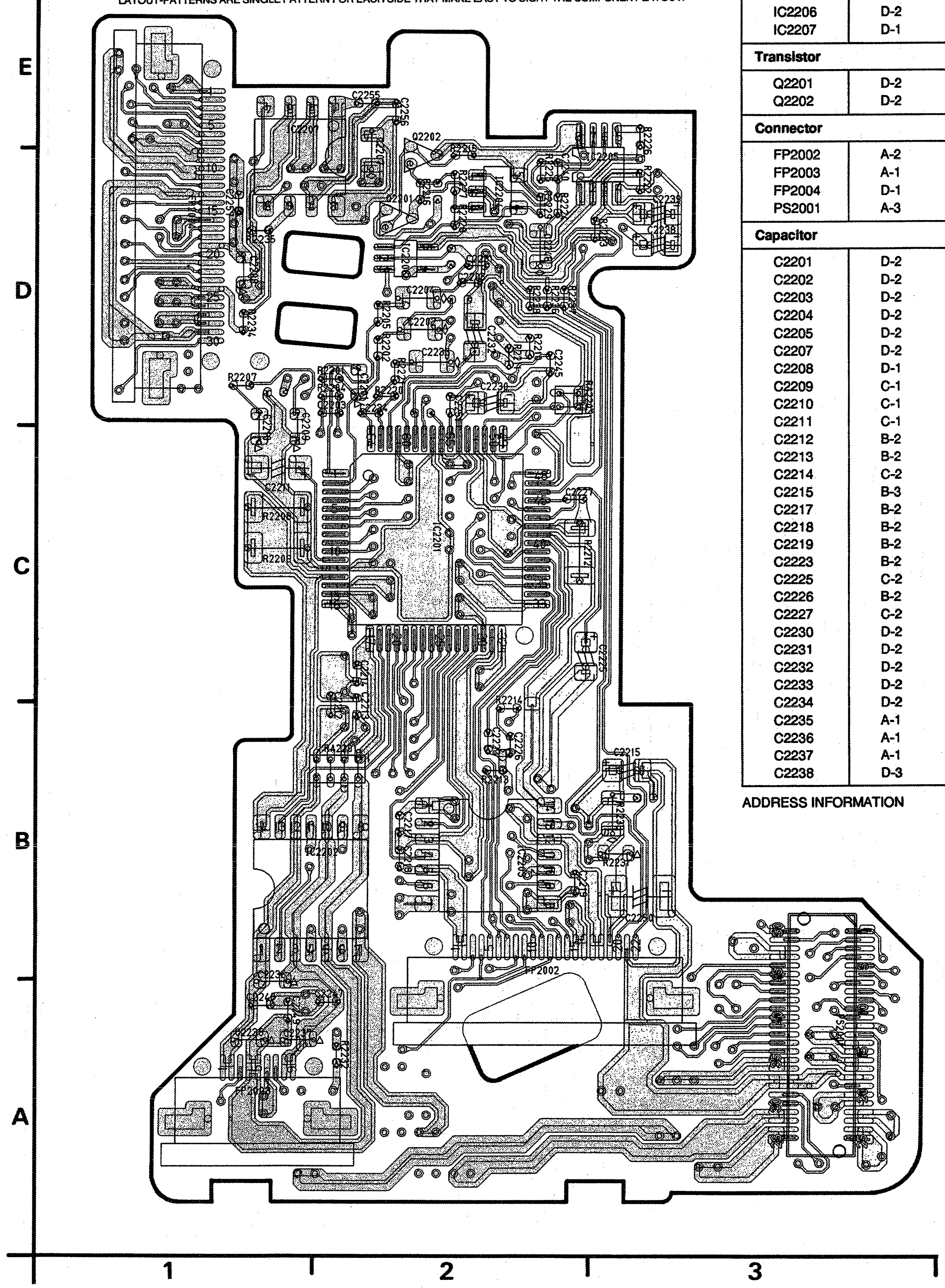
ADDRESS INFORMATION


C
B
A
1
2
3
4
IC5001
Q5002
Q5005
Q5006
FP5001
L5002
L5003
L5007
CKA1
CKA2
CKA3
CKA4
CKA5
CKA6
CKA7
MR1
MR2
MR3
MR4
C5026
R5018
C5024
R5017
C5021
C5025
C5020
C5013
C5014
C5015
C5018
C5017
C5001
R5002
C5004
C5010
C5031
C5002
C5039
R5003
R5004
C5007
R5005
C5040
R5025
C5036
R5029
R5028
C5032
C5030
R5026
R5021
R5020
R5019
C5027
C5029
C5023
C5003
C5034
C5037
C5035
R5024
R5015
R5016
R5010
R5014
R5012
R5013
C5016
C5028
C5019

NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

3-42. DRIVE C.B.A. (VEP02561A)

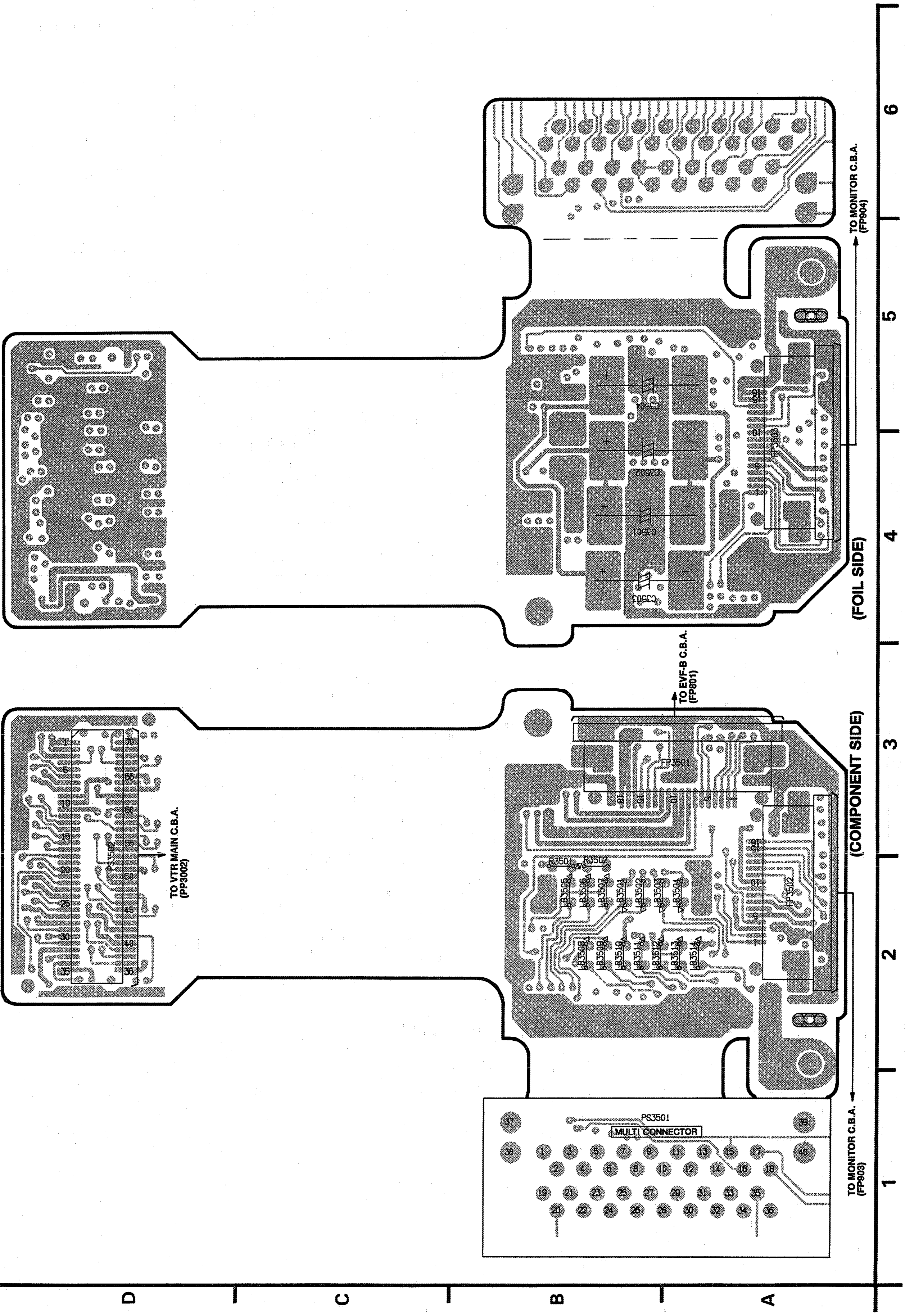
NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.


E
D
C
B
A
1
2
3
IC2201
IC2207
Q2202
C2255
C2256
R2226
C2205
R2207
R2208
R2206
R2224
R2216
RA2201
R2201
R2231
C2215
C2250
FP2002
FP2003
C2236
C2237

DRIVE C.B.A.	
Integrated Circuit	
IC2201	C-2
IC2202	B-1
IC2203	B-2
IC2204	D-2
IC2205	D-2
IC2206	D-2
IC2207	D-1
Transistor	
Q2201	D-2
Q2202	D-2
Connector	
FP2002	A-2
FP2003	A-1
FP2004	D-1
PS2001	A-3
Capacitor	
C2201	D-2
C2202	D-2
C2203	D-2
C2204	D-2
C2205	D-2
C2207	D-2
C2208	D-1
C2209	C-1
C2210	C-1
C2211	C-1
C2212	B-2
C2213	B-2
C2214	C-2
C2215	B-3
C2217	B-2
C2218	B-2
C2219	B-2
C2223	B-2
C2225	C-2
C2226	B-2
C2227	C-2
C2230	D-2
C2231	D-2
C2232	D-2
C2233	D-2
C2234	D-2
C2235	A-1
C2236	A-1
C2237	A-1
C2238	D-3
C2239	D-3
C2240	D-2
C2245	D-2
C2246	D-2
C2247	A-2
C2248	A-1
C2249	A-1
C2250	B-3
C2251	D-2
C2255	E-2
C2256	E-2
C2257	D-1
Resistor	
R2201	D-2
R2202	D-2
R2204	D-2
R2205	D-2
R2207	D-1
R2208	C-1
R2209	C-1
R2210	D-2
R2211	D-2
R2212	C-2
R2213	B-2
R2214	B-2
R2215	D-2
R2216	D-2
R2220	D-2
R2221	D-2
R2222	D-3
R2223	D-2
R2224	D-2
R2225	D-2
R2226	E-3
R2227	D-2
R2228	D-2
R2229	D-2
R2231	B-3
R2232	A-2
R2233	B-3
R2234	D-1
R2235	D-1
R2236	D-2
R2237	D-2
R2238	D-2
Resistor Array	
RA2201	B-2
RA2203	D-2

ADDRESS INFORMATION

3-43. LCD I/F C.B.A. (VEP00Y65A)

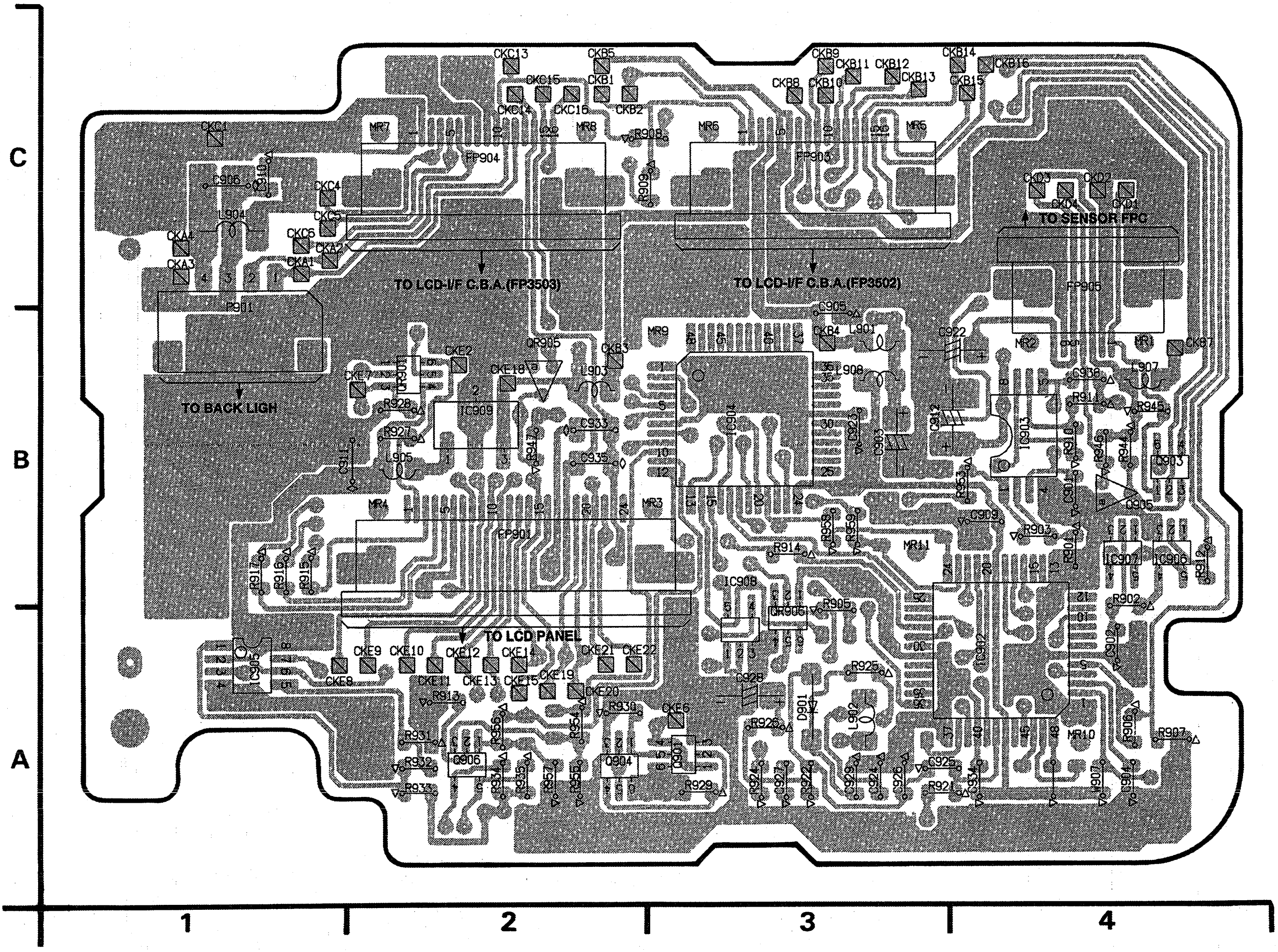

TO MONITOR C.B.A.
(FP904)
(FOIL SIDE)
C3501
C3502
C3503
C3504
FP3503
TO EVF-B C.B.A.
(FP801)
(COMPONENT SIDE)
FP3501
FP3502
PS3502
TO VTR MAIN C.B.A.
(PP3002)
R3501
R3502
PS3501
MULTI CONNECTOR
TO MONITOR C.B.A.
(FP903)
1
2
3
4
5
6
A
B
C
D

NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

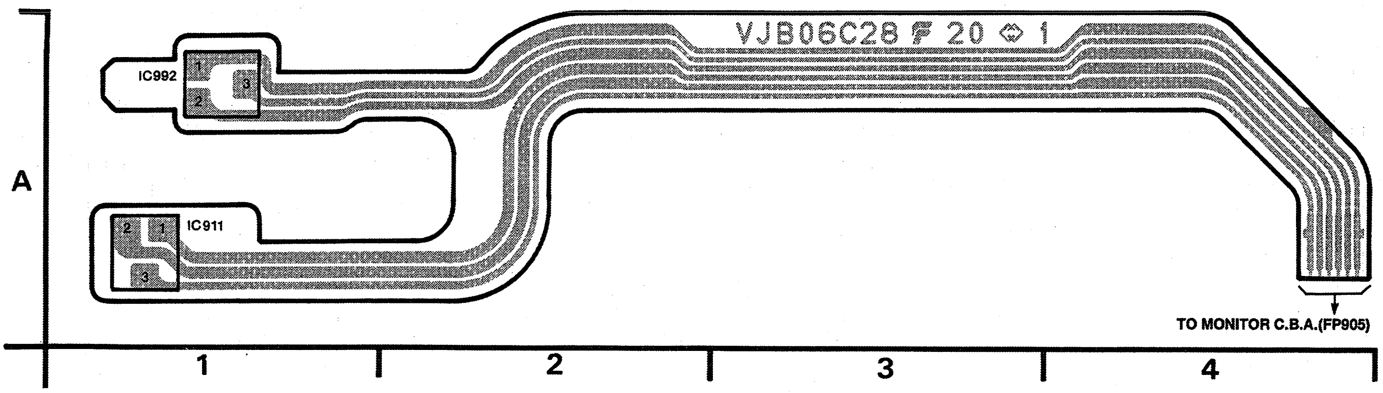
3-44. MONITOR C.B.A. (VEP26195B)

MONITOR C.B.A.	
Integrated Circuit	
IC902	A-4
IC903	B-4
IC904	B-3
IC905	A-1
IC906	B-4
IC907	B-4
IC908	B-3
IC909	B-2
Transistor	
Q901	A-3
Q903	B-4
Q904	A-2
Q905	B-4
Q906	A-2
Transistor & Resistor	
QR901	B-2
QR905	B-2
QR906	A-3
Connector	
FP901	B-2
FP903	C-3
FP904	C-2
FP905	C-4
P901	B-1

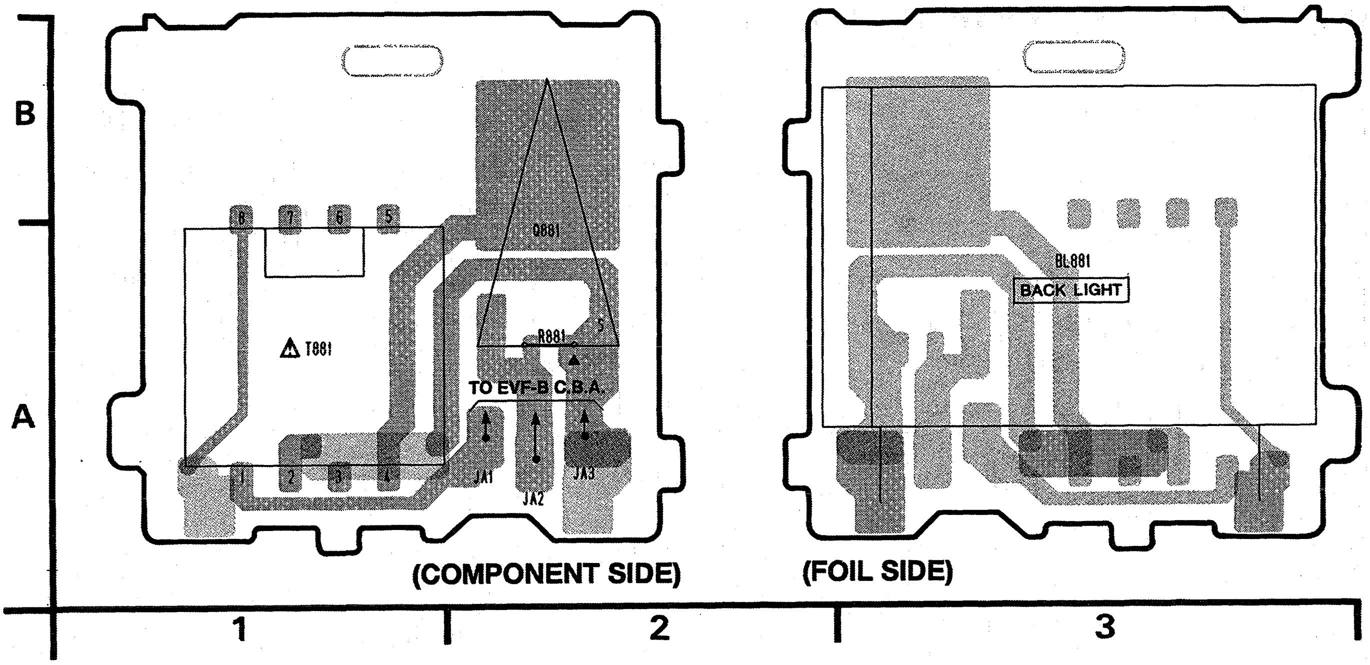
ADDRESS INFORMATION


C
B
A
1
2
3
4
TO LCD-I/F C.B.A.(FP3503)
TO LCD-I/F C.B.A.(FP3502)
TO SENSOR FPC
TO BACK LIGH
TO LCD PANEL
FP904
FP903
FP905
FP901
P901
IC902
IC903
IC904
IC905
IC906
IC907
IC908
IC909
QR901
QR905
Q903
Q904
Q905
Q906
L901
L902
L903
L904
L905
D901

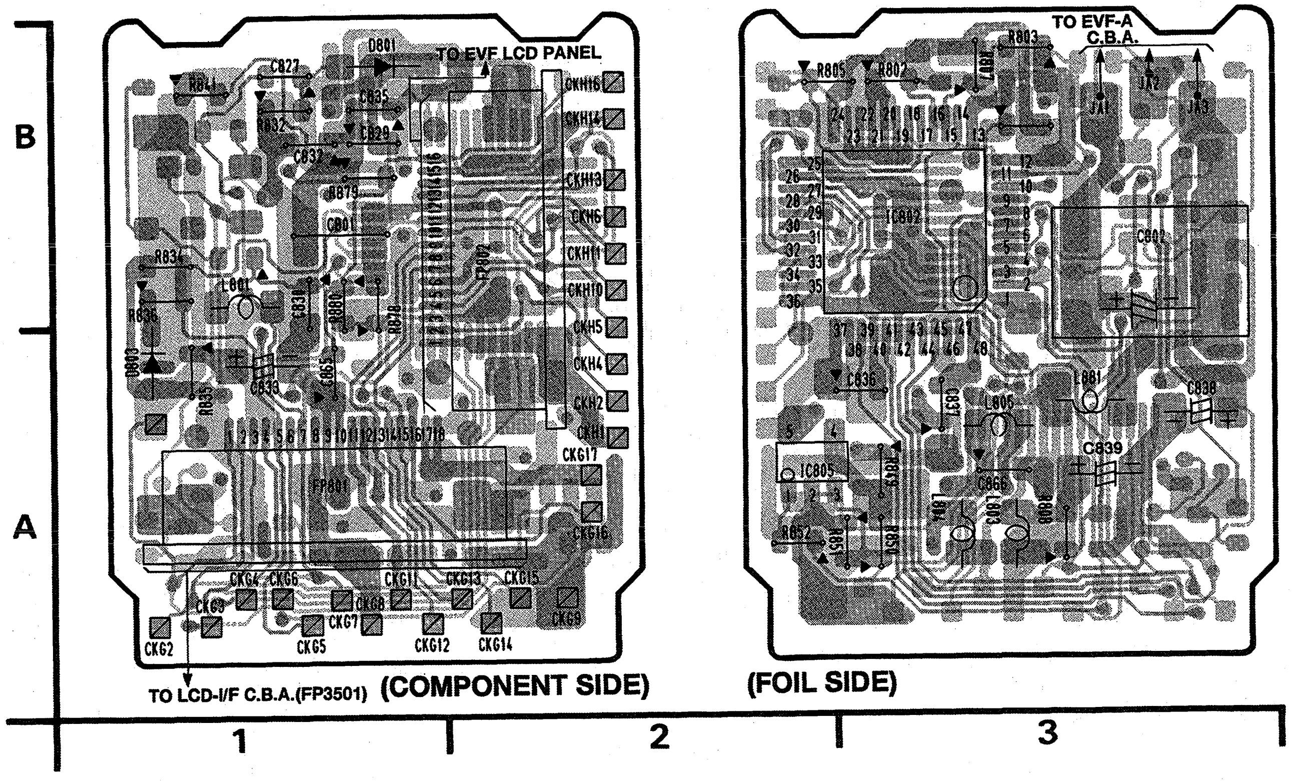
3-45. HALL SENSOR C.B.A. (VEP06C28A)


A
IC992
IC911
VJB06C28 20 1
TO MONITOR C.B.A.(FP905)
1
2
3
4

3-46. E.V.F. (A) C.B.A. (VEP28240D)


B
A
Q881
T881
R881
TO EVF-B C.B.A.
JA1
JA2
JA3
BL881
BACK LIGHT
(COMPONENT SIDE)
(FOIL SIDE)
1
2
3

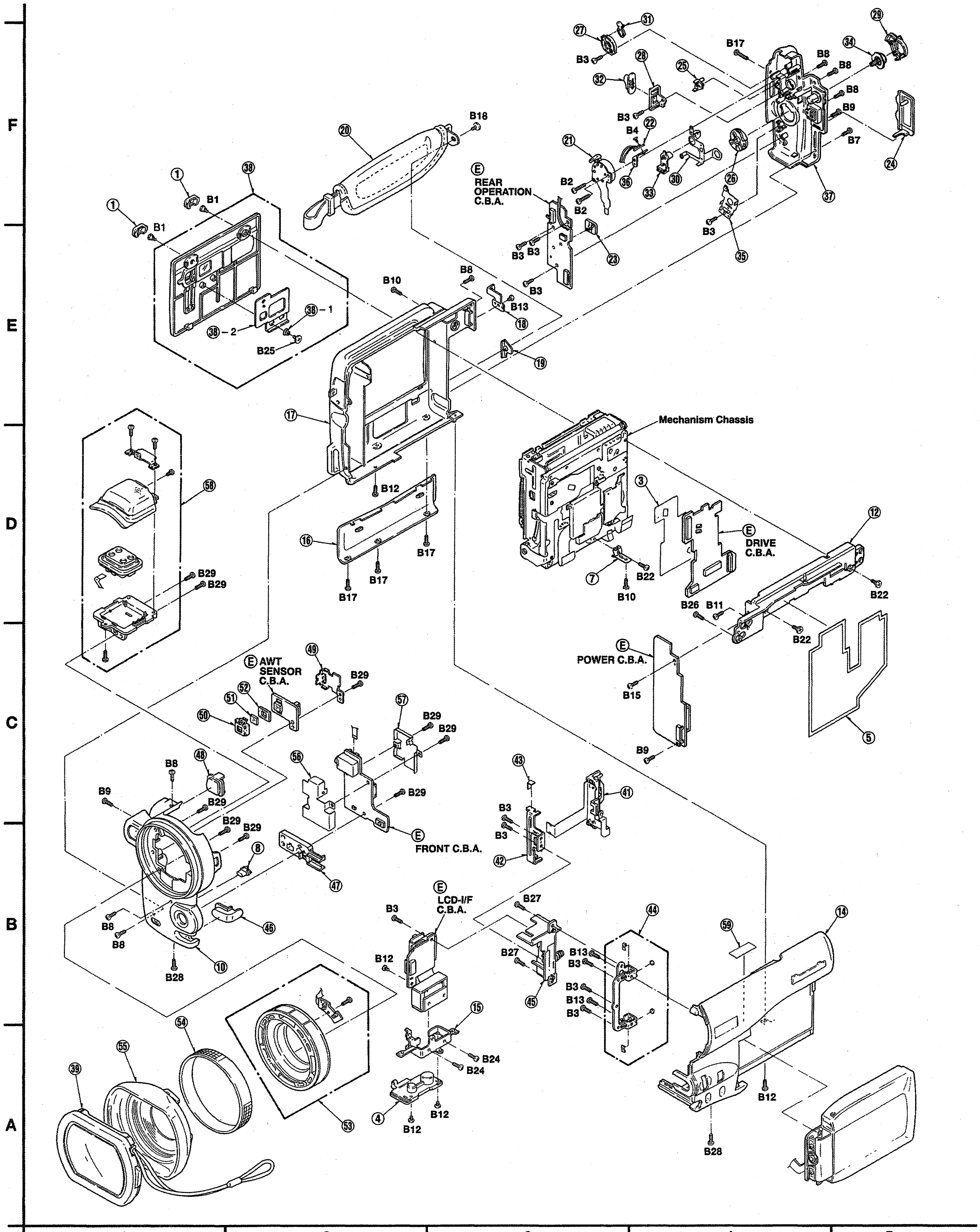
3-47. E.V.F. (B) C.B.A. (VEP28244B)


B
A
D801
TO EVF LCD PANEL
R841
C827
C835
R832
C829
C832
R879
C801
FP802
R834
L801
C830
R880
R878
R836
D803
C833
C65
R835
FP801
CKH16
CKH14
CKH13
CKH6
CKH11
CKH10
CKH5
CKH4
CKH2
CKH1
CKG17
CKG16
CKG15
CKG13
CKG11
CKG9
CKG8
CKG7
CKG6
CKG5
CKG4
CKG3
CKG2
CKG12
CKG14
TO LCD-I/F C.B.A.(FP3501)
(COMPONENT SIDE)
TO EVF-A C.B.A.
R803
R805
R802
R801
JA1
JA2
JA3
IC802
C802
C836
C837
L805
L881
C838
C839
IC805
C866
R852
R851
L801
L802
R879
R850
R806
(FOIL SIDE)
1
2
3

SECTION 4 EXPLODED VIEWS & PARTS LIST

4-1. EXPLODED VIEWS & MECHANICAL REPLACEMENT PARTS LIST

❶ FRAME & CASING PARTS SECTION (1)

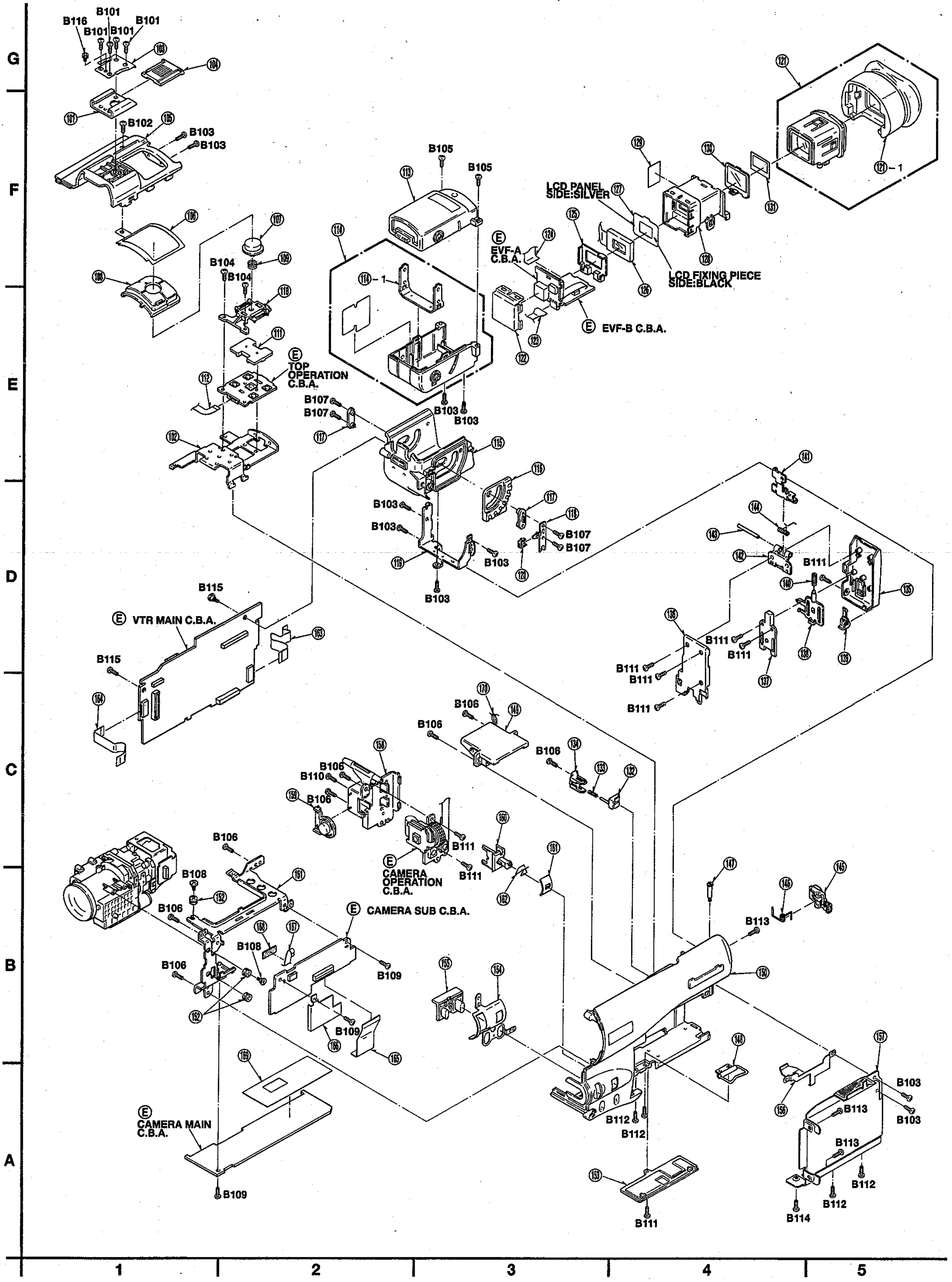


F
E
D
C
B
A
1
2
3
4
5
㉗
㉛
B3
㉘
㉜
㉕
B17
㉙
㉞
B8
B8
B8
B9
B7
㉔
B3
㉒
B4
㉑
㊱
㉚
㉝
㉖
㊲
B18
⑳
Ⓔ
REAR OPERATION C.B.A.
B2
B2
㉓
B3
B3
B3
㉟
①
①
B1
B1
㊳
㊳-1
㊳-2
B25
B10
B8
B3
B13
⑱
⑲
⑰
B12
⑯
B17
B17
B17
Mechanism Chassis
③
Ⓔ
DRIVE C.B.A.
⑫
⑦
B22
B10
B22
B26
B11
B22
Ⓔ
POWER C.B.A.
B15
B9
⑤
(58)
B29
B29
Ⓔ AWT SENSOR C.B.A.
㊾
B29
(52)
(51)
(50)
(57)
B29
B29
(56)
B29
Ⓔ
FRONT C.B.A.
㊼
㊸
㊶
B3
B3
㊷
㊽
B8
B9
B29
B29
B29
⑧
㊻
B8
B8
⑩
B28
Ⓔ
LCD-I/F C.B.A.
B3
B12
B27
B27
㊺
㊹
B13
B3
B3
B13
B3
㊾
⑭
(59)
⑮
B24
B24
④
B12
B12
(53)
(54)
(55)
㊴
B12
B28

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1 (1)	VGP4575	SCREW CAP	2	
3 (1)	VMZ2689	BARRIER	1	
4 (1)	VMD2796	TRIPOD FRAME	1	
5 (1)	VMZ2708	BER BARRIER	1	
7 (1)	VXA5933	MECH. FIXING ANGLE U.	1	
8 (1)	VGL0772	TALLY PANEL	1	
10 (1)	VYK8082	FRONT CASE (1) U.	1	
12 (1)	VYK7875	MECH. FIXING PIECE U.	1	
14 (1)	VYK8119	SIDE CASE R (2) U.	1	NV-DX100EG/B
14 (1)	VYK8180	SIDE CASE R (2) U.	1	NV-DX100EN/ENA
15 (1)	VMP5461	MULTICONNECTOR ANGLE	1	
16 (1)	VGQ4495	GRIP COVER	1	
17 (1)	VYK7930	SIDE CASE L (1) U.	1	
18 (1)	VMA9749	REAR FIXING ANGLE	1	
19 (1)	VMA9770	GRIP ANGLE	1	
20 (1)	VYC0788	GRIP BELT U.	1	
21 (1)	VEK8154	ZOOM OPERATION U.	1	
22 (1)	VEK8160	DEW SENSOR	1	
23 (1)	VMG0763	RUBBER SWITCH	1	
24 (1)	VGF0690	JACK COVER	1	
25 (1)	VGL0764	VTR CHANGE PANEL	1	
26 (1)	VGQ4272	S/S BUTTON PIECE	1	
27 (1)	VGQ4492	PHOTO SHOT BUTTON HOLDER	1	
28 (1)	VGQ4493	EJECT BUTTON HOLDER	1	
29 (1)	VGQ4494	S/S LEVER	1	
30 (1)	VGQ4515	B ESD PLATE	1	
31 (1)	VGU7574	PHOTO SHOT BUTTON	1	
32 (1)	VGU7575	EJECT BUTTON	1	
33 (1)	VGU7576	VTR CHANGE BUTTON	1	
34 (1)	VGU7577	S/S BUTTON	1	
35 (1)	VMC1271	S/S CLICK SPRING	1	
36 (1)	VMP5412	DEW FIXING ANGLE	1	
37 (1)	VYK8085	REAR CASE (1) U.	1	
38 (1)	VYK7929	CASSETTE COVER U.	1	
38-1 (1)	VMB3148	CASSETTE COVER SPRING	1	
38-2 (1)	VMP5413	CASSETTE FIXING BASE	1	
39 (1)	VYF2439	LENS HOOD CAP U.	1	
41 (1)	VEK8161	BATTERY TERMINAL U.	1	
42 (1)	VMP5386	BATTERY FIXING ANGLE	1	
43 (1)	VGQ4524	BLIND BARRIER	1	
44 (1)	VYK8216	LCD FIXING PLATE U.	1	
45 (1)	VYK7881	HINGE PIECE U.	1	
46 (1)	VKW2418	REMOTE CONTROL WINDOW	1	
47 (1)	VYK8071	TALLY PANEL HOLDER U.	1	
48 (1)	VKW2419	AWT WINDOW	1	
49 (1)	VMP5467	AWT ANGLE	1	
50 (1)	VGQ4592	AWT HOLDER	1	
51 (1)	VDL0397	IR CASSETTE FILTER	1	
52 (1)	VGQ3306	IR PLATE SPACER	1	
53 (1)	VXP1846	MF RING U.	1	
54 (1)	VDW0512	MF DECORETION RING	1	
55 (1)	VYF2422	LENS HOOD U.	1	
56 (1)	VSC4666	FRONT CASE ANGLE A	1	
57 (1)	VSC4667	FRONT CASE ANGLE B	1	
58 (1)	VYK7888	MIC CASE U.	1	
59 (1)	VGQ4694	ESD BARRIER	1	
B1 (1)	VHD1100	SCREW	2	
B2 (1)	XQN16+BJ5	SCREW	2	
B3 (1)	XQN2+BJ4	SCREW	12	
B4 (1)	XQN16+B15	SCREW	1	
B7 (1)	XQN16+BJ6FN	SCREW	1	
B8 (1)	XQN16+B5FN	SCREW	7	
B9 (1)	XQN16+B5FZ	SCREW	3	
B10 (1)	XQN2+BJ6FN	SCREW	2	
B11 (1)	XQN2+B35FN	SCREW	1	
B12 (1)	XQN16+B3FZ	SCREW	5	
B13 (1)	XQN2+B25	SCREW	3	
B15 (1)	XQN16+BJ4FZ	SCREW	1	
B17 (1)	XQN16+B25FZ	SCREW	4	
B18 (1)	VHD0794	SCREW	1	
B22 (1)	VHD0866	SCREW	3	
B24 (1)	XQN2+B3FZ	SCREW	2	
B25 (1)	VHD1105	SCREW	1	
B26 (1)	VMS5604	SCREW	1	
B27 (1)	XQN2+BF4FN	SCREW	2	
B28 (1)	XQN16+B3FN	SCREW	2	
B29 (1)	XQN2+CJ5	SCREW	9	

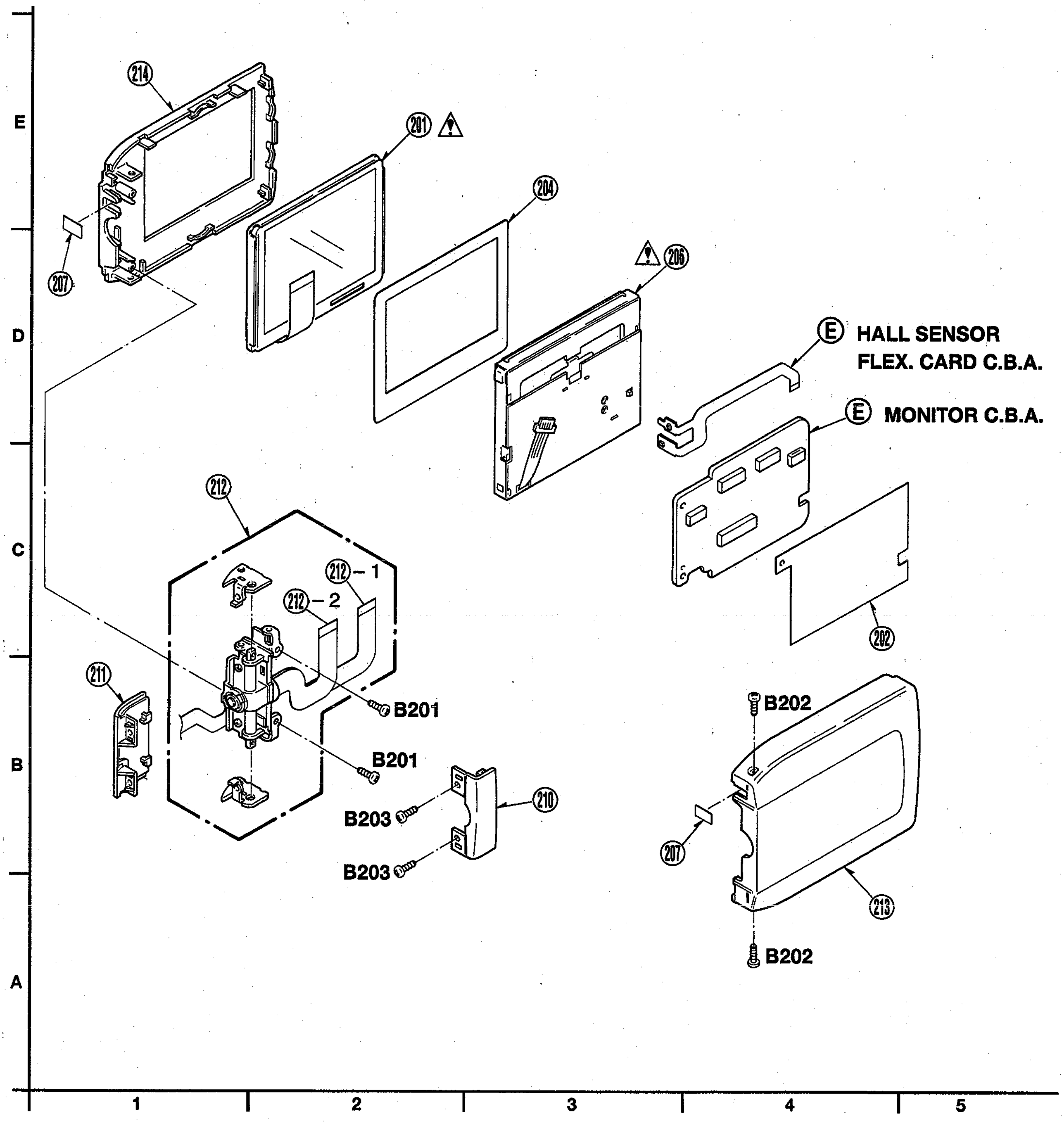
❷ FRAME & CASING PARTS SECTION (2)


G
F
E
D
C
B
A
1
2
3
4
5
B116
B101
B101
B101
B101
(103)
(104)
(101)
B102
(105)
B103
B103
(106)
(108)
(107)
(109)
B104
B104
(110)
(111)
E TOP OPERATION C.B.A.
(112)
(102)
B105
B105
(113)
(114)
(114)-1
B103
B103
B107
B107
(117)
(115)
(116)
(117)
(118)
B107
B107
B103
B103
(119)
B103
(120)
B103
E EVF-A C.B.A.
(124)
(125)
(122)
(123)
E EVF-B C.B.A.
LCD PANEL SIDE:SILVER
(127)
(126)
LCD FIXING PIECE SIDE:BLACK
(128)
(129)
(130)
(131)
(121)
(121)-1
(141)
(144)
(143)
(142)
B111
(140)
(135)
(136)
B111
B111
(137)
(138)
(139)
B111
B111
B111
B115
E VTR MAIN C.B.A.
(163)
B115
(164)
B106
(170)
(149)
B106
B106
(134)
(133)
(132)
(158)
B106
B110
(159)
B106
B111
E CAMERA OPERATION C.B.A.
B111
(160)
(161)
(162)
B106
B108
(151)
(152)
B106
E CAMERA SUB C.B.A.
B108
(168)
(167)
B109
B106
(152)
B109
(166)
(165)
(155)
(154)
(147)
(146)
(145)
B113
(150)
(148)
(169)
E CAMERA MAIN C.B.A.
B109
B112
B112
(153)
B111
(157)
(156)
B103
B113
B103
B113
B112
B112
B114

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
101 (2)	VMP5490	SHOE	1	
102 (2)	VMP5470	SHOE ANGLE	1	
103 (2)	VMC1372	SHOE SPRING	1	
104 (2)	VGQ4625	SHOE COVER	1	
105 (2)	VKM4765	TOP CASE	1	
106 (2)	VGQ4627	VTR EARTH PLATE	1	
107 (2)	VGU7708	VTR OPERATION BUTTON (A)	1	
108 (2)	VGU7709	VTR OPERATION BUTTON (B)	1	
109 (2)	VMB2531	MODE SPRING	1	
110 (2)	VGQ4598	VTR OPERATION HOLDER	1	
111 (2)	VGQ4853	VTR DEADEN SHEET	1	
112 (2)	VJB29131	TOP OP. FLEX. CARD	1	FP6801 - FP6001
113 (2)	VYK8102	EVF CASE U. (UPPER)	1	
114 (2)	VYK8066	EVF CASE U. (LOWER)	1	
114-1 (2)	VMP5464	EVF CASE ANGLE	1	
115 (2)	VYK7883	EVF HOLD CASE U.	1	
116 (2)	VGQ4584	EVF ROTARY PIECE	1	
117 (2)	VGQ4585	EVF ROTARY HOLDER	2	
118 (2)	VMC1365	EVF ROTARY SPRING	1	
119 (2)	VMP5465	EVF HOLD ANGLE	1	
120 (2)	VGQ4675	EVF LOCK PIECE	1	
121 (2)	VYK8120	EYE CAP HOLDER U.	1	
121-1 (2)	VMG1100	EYE CAP	1	
122 (2)	VSC4665	LCD SHIELD CASE	1	
123 (2)	VJB29127	EVF FLEX. CARD	1	FP801 - FP3501
124 (2)	VWJ1174	EVF A - EVF B FLEX. CARD	1	EVF A - EVF B
125 (2)	VGQ4481	B. L. HOLDER	1	
126 (2)	F05KM100P	LCD	1	
127 (2)	VGQ4730	LCD MASK	1	
128 (2)	VJF1315	LCD FIXING PIECE	1	
129 (2)	VGQ3457	EVF SHEET	1	
130 (2)	VGQ4673	EVF PROTECT PANEL	1	
131 (2)	VGQ4736	EVF BARRIER SHEET	1	
132 (2)	VGU7557	BATTERY LOCK KNOB	1	
133 (2)	VMB3143	BATTERY LOCK SPRING	1	
134 (2)	VGQ4448	BATTERY LOCK HOLDER	1	
135 (2)	VKF2819	BATTERY DOOR (UPPER)	1	
136 (2)	VKF2734	BATTERY DOOR (LOWER)	1	
137 (2)	VGQ4447	DOOR KNOB HOLDER	1	
138 (2)	VGU7556	BATTERY DOOR KNOB	1	
139 (2)	VGQ4446	BATTERY DOOR COVER	1	
140 (2)	VMB2815	EYE CAP LOCK SPRING	1	
141 (2)	VMP5390	BATTERY DOOR ROTARY ANGLE	1	
142 (2)	VMP5391	BATTERY DOOR FIXING ANGLE	1	
143 (2)	VMS6210	BATTERY DOOR SHAFT	1	
144 (2)	VMB3144	BATTERY DOOR OPEN SPRING	1	
145 (2)	VGU7635	LCD LOCK LEVER	1	
146 (2)	VMB3145	LCD LOCK SPRING	1	
147 (2)	VHD1093	LCD LOCK SHAFT	1	
148 (2)	VYK7758	STAND ARM U.	1	
149 (2)	VYK7879	SPEAKER HOLDER U.	1	
150 (2)	VYK8119	SIDE CASE R (2) U.	1	NV-DX100EG/B
150 (2)	VYK8180	SIDE CASE R (2) U.	1	NV-DX100EN/ENA
151 (2)	VMP5469	CAMERA FRAME	1	
152 (2)	VMG0952	EXPAND RUBBER	3	
153 (2)	VKF2732	EVR COVER	1	
154 (2)	VGQ4582	CAMERA EARTH PLATE	1	
155 (2)	VGU7611	CAMERA OP. BUTTON	1	
156 (2)	VGQ4600	RADIATOR PLATE (A)	1	
157 (2)	VYQ1545	BATTERY COVER U.	1	
158 (2)	VGQ4580	CAMERA OP. HOLDER	1	
159 (2)	VGU7610	FOCUS BUTTON	1	
160 (2)	VGU7609	AUTO/MANUAL KNOB	1	
161 (2)	VGQ4672	KNOB COVER	1	
162 (2)	VMB3197	KNOB COVER SPRING	1	
163 (2)	VWJ16C8050AA	16P FLAT CARD CABLE	1	FP6002 - FP6701
164 (2)	VWJ13C8045AA	15P FLAT CARD CABLE	1	FP4001 - FP4801
165 (2)	VJB23444	CAMERA FLEX. CARD	1	FP501 - FP301
166 (2)	VGQ4776	CAMERA SUB BARRIER	1	
167 (2)	VJB23445	AWT FLEX. CARD	1	FP502 - FP401
168 (2)	VGQ2184	BARRIER	1	
169 (2)	VGQ4343	CAMERA BARRIER	1	
170 (2)	VEE0A50	SPEAKER CABLE	1	- P3001
B101 (2)	XQS2+A7FN	SCREW	4	
B102 (2)	XQN16+B8FN	SCREW	1	
B103 (2)	XQN16+BJ3FN	SCREW	10	
B104 (2)	XQN16+B4FN	SCREW	2	
B105 (2)	XQN2+CJ6FZ	SCREW	2	
B106 (2)	XQN2+BJ4	SCREW	8	
B107 (2)	VHD1127	SCREW	4	
B108 (2)	VMS5604	SCREW	2	
B109 (2)	XQN2+B3	SCREW	3	
B110 (2)	XQN2+BJ8	SCREW	1	
B111 (2)	XQN16+BJ4FZ	SCREW	9	
B112 (2)	XQN16+BJ3FZ	SCREW	2	
B113 (2)	XQN2+BF4FN	SCREW	1	
B114 (2)	XQN16+B3FZ	SCREW	1	
B115 (2)	VHD1099	SCREW	2	
B116 (2)	XVE2A+3FN	SCREW	1	

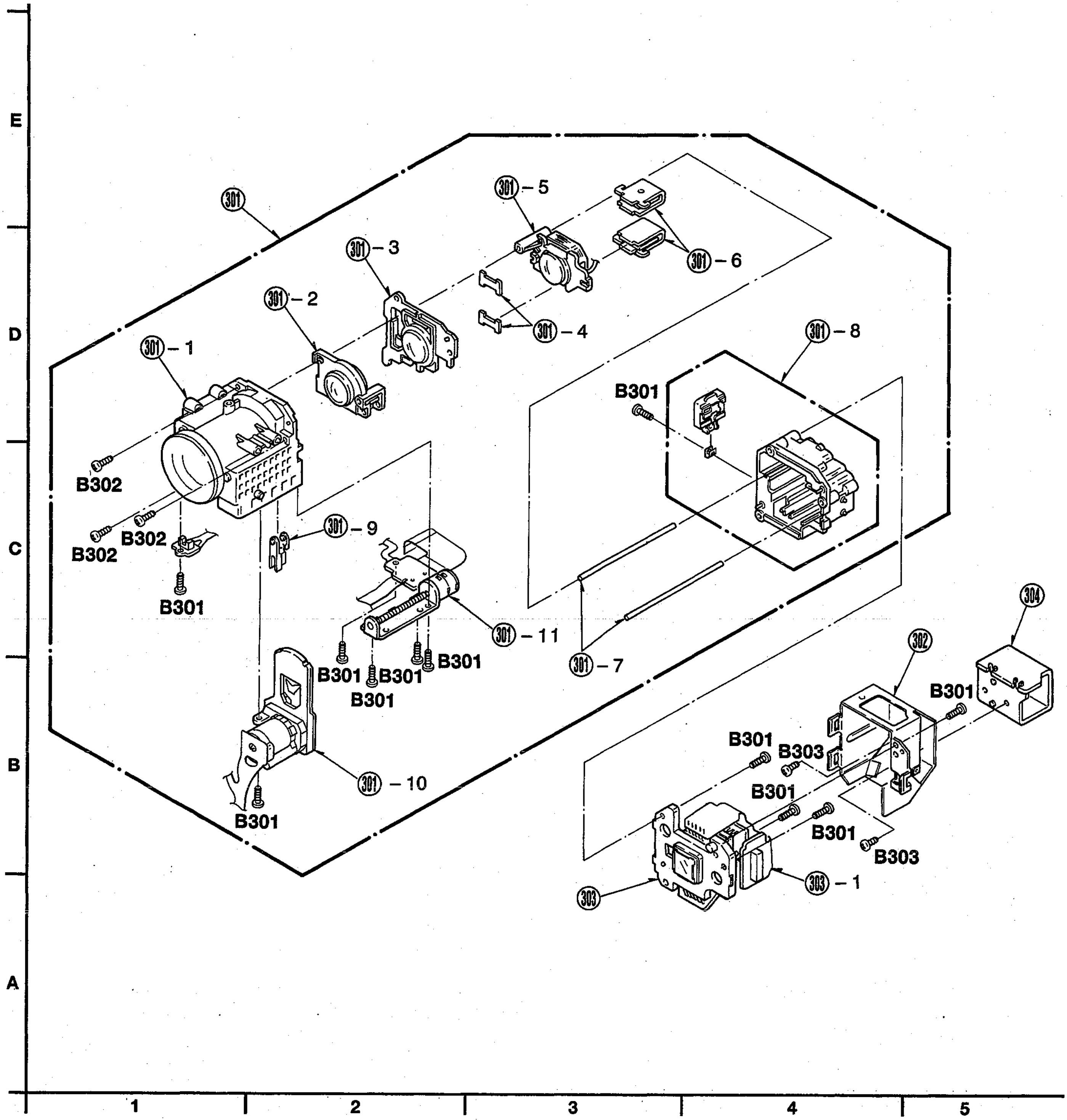
❸ LCD PARTS SECTION


E
D
C
B
A
1
2
3
4
5
214
201 ⚠
204
⚠ 206
207
Ⓔ HALL SENSOR FLEX. CARD C.B.A.
Ⓔ MONITOR C.B.A.
212
212 − 1
212 − 2
202
211
B201
B201
B202
B203
B203
210
207
213
B202

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ 201 (3)	DCX501AKB7	LCD PANEL	1	
202 (3)	VGQ4630	LCD BARRIER	1	
204 (3)	VGQ4695	LCD SHIELD SHEET	1	
⚠ 206 (3)	VEK8215	BACK LIGHT U.	1	
207 (3)	VGQ4635	PROTECT SHEET	2	
210 (3)	VGQ4645	SHAFT COVER (UPPER)	1	
211 (3)	VYQ1505	SHAFT COVER (LOWER) U.	1	
212 (3)	VXD0280	LCD ROTARY SHAFT (1) U.	1	
212-1 (3)	VJB03E23	MONITOR SIGNAL FLEX.	1	
212-2 (3)	VJB06C27	MONITOR OPERATION FLEX.	1	
213 (3)	VYK8103	LCD TOP CASE U.	1	NV-DX100EG/B
213 (3)	VYK8266	LCD TOP CASE U.	1	NV-DX100EN/ENA
214 (3)	VYK8070	LCD BOTTOM CASE U.	1	
B201 (3)	XQN2+BJ5	SCREW	2	
B202 (3)	XQN2+BF5FN	SCREW	2	
B203 (3)	XQN2+BF4FN	SCREW	2	

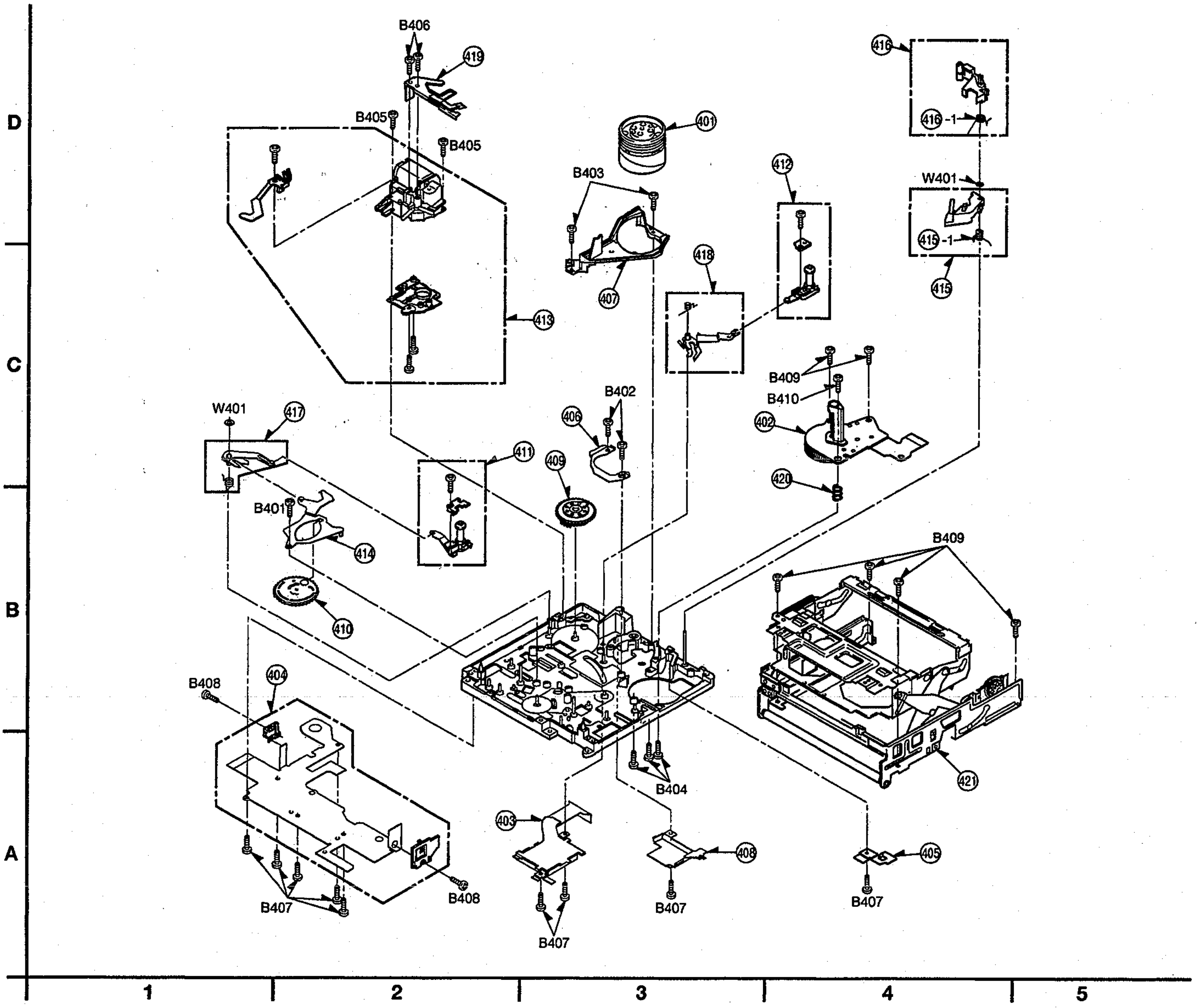
❹ CAMERA LENS SECTION


E
D
C
B
A
1
2
3
4
5
301
301-5
301-3
301-6
301-2
301-4
301-1
301-8
B301
B302
B302
B302
B301
301-9
301-11
B301
B301
B301
B301
301-7
304
302
B301
B301
B303
B301
B301
B303
301-10
B301
303
303-1

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
301 (4)	VXW0367	LENS U.	1	
301-1 (4)	VXQ0666	MAIN UNIT	1	
301-2 (4)	VXP1829	2ND MOVING FRAME U.	1	
301-3 (4)	VXQ0667	3RD LENS UNIT	1	
301-4 (4)	VMA9768	SIDE YOKE	2	
301-5 (4)	VXP1830	4TH MOVING FRAME U.	1	
301-6 (4)	VXA5946	YOKE UNIT	2	
301-7 (4)	VMS6230	GUIDE POLE	1	
301-8 (4)	VDW0506	MASTER FLANGE	1	
301-9 (4)	VML3277	2ND LACK	1	
301-10 (4)	VEK8197	LENS FLEX. CARD	1	
301-11 (4)	VEM0621	ZOOM MOTOR U.	1	
302 (4)	VSC4668	SHIELD CASE	1	
303 (4)	VXQ0669	PRISM UNIT	1	
303-1 (4)	VEP22269B	CCD FLEX. CARD C. B. A.	1	(RTL)
304 (4)	VGQ4738	CCD PLATE	1	
B301 (4)	XQN16+CJ5	SCREW	11	
B302 (4)	XQN16+CJ8	SCREW	3	
B303 (4)	XQN2+BF4	SCREW	2	

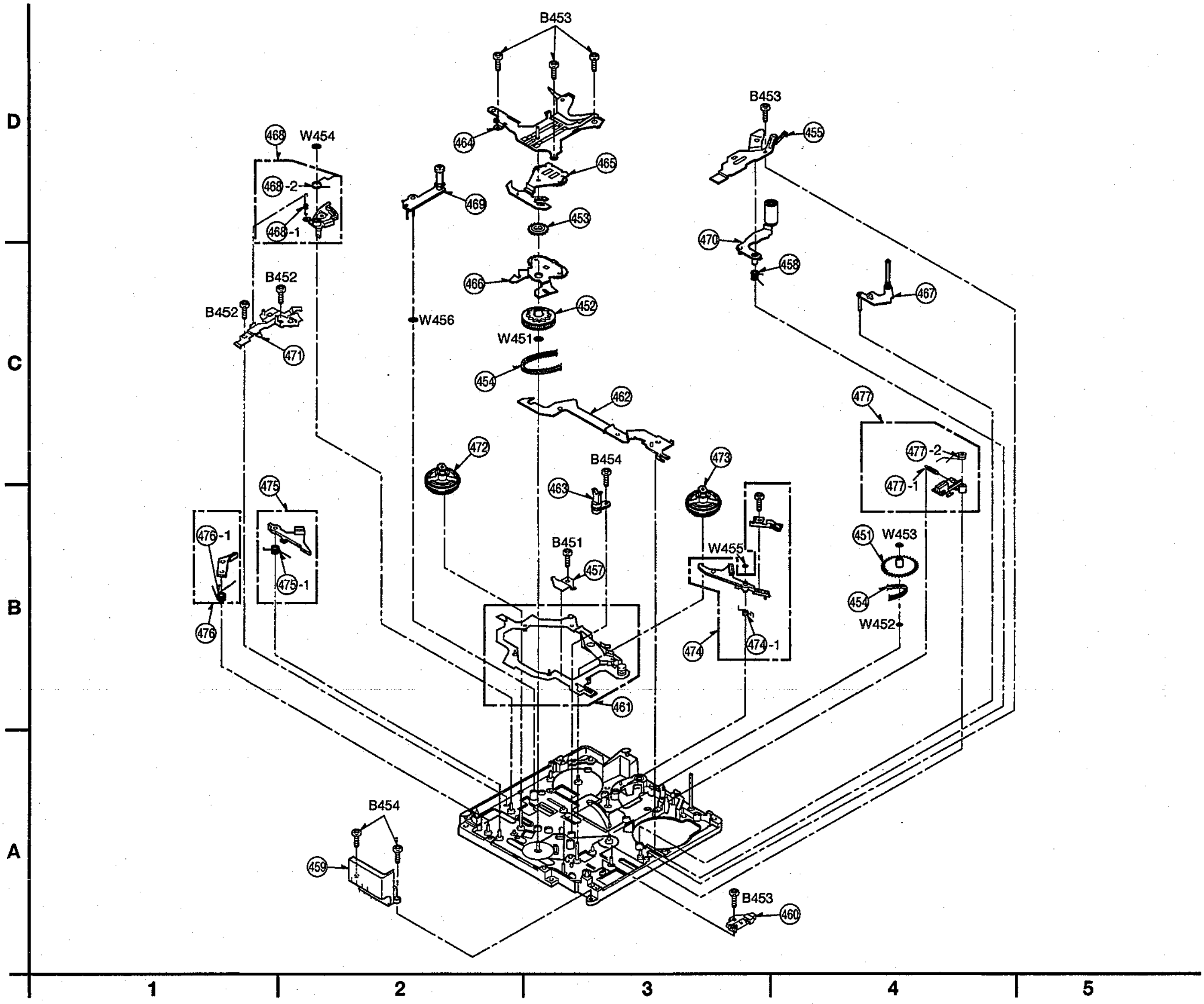
❺ VCR MECHANISM SECTION (1)


B406
419
416
416-1
D
B405
B405
401
B403
412
W401
415-1
407
418
415
413
C
W401
417
B402
406
411
409
B409
B410
402
420
B401
414
B409
410
B
B408
404
B404
421
403
408
405
A
B407
B408
B407
B407
B407
1
2
3
4
5

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
401 (5)	VEG1438	CYLINDER UNIT	1	
402 (5)	VEM0624	CAPSTAN MOTOR UNIT	1	
403 (5)	VEP05352A	HEAD AMP C.B.A.	1	
403-*(5)	VSC4639	HEAD AMP SHIELD CASE	1	
404 (5)	VES0856	FLEXIBLE CABLE	1	
405 (5)	VMA9708	CAPSTAN COVER	1	
406 (5)	VMA9179	RADON PLATE	1	
407 (5)	VMD2373	RAIL	1	
408 (5)	VSC4640	SHIELD CASE	1	
409 (5)	VSR0114	MODE SW	1	
410 (5)	VXA5407	CAM GEAR UNIT	1	
411 (5)	VXA5409	S BOAT UNIT	1	
412 (5)	VXA5410	T BOAT UNIT	1	
413 (5)	VXA5417	GEAR BOX (LOADING MOTOR)	1	
414 (5)	VXA5612	RADON COVER UNIT	1	
415 (5)	VXL2461	T2 ARM UNIT	1	
415-1 (5)	VMB2789	T2 ARM SPRING	1	
416 (5)	VXL2468	CLEANING ARM UNIT	1	
416-1 (5)	VMB2791	CLEANING ARM SPRING	1	
417 (5)	VXL2470	S1 ARM UNIT	1	
418 (5)	VXL2471	T1 ARM UNIT	1	
419 (5)	VMA9753	BRUSH ARM STOPPER	1	
420 (5)	VMB2777	CAPSTAN ADJ. SPRING	1	
421 (5)	VXA5387	GARAGE UNIT	1	
B401 (5)	VHD0878	SCREW	1	
B402 (5)	VHD0989	SCREW	2	
B403 (5)	XQN14+B4	SCREW	2	
B404 (5)	VXQ0439	SCREW	3	
B405 (5)	XQN14+B35	SCREW	2	
B406 (5)	XQN14+BQ4	SCREW	2	
B407 (5)	XQN14+B15	SCREW	9	
B408 (5)	XQN14+B2	SCREW	2	
B409 (5)	VHD0882	SCREW	6	
B410 (5)	XQN14+B4FZ	SCREW	1	
W401 (5)	VMX2027	WASHER	2	

⑥ VCR MECHANISM SECTION (2)

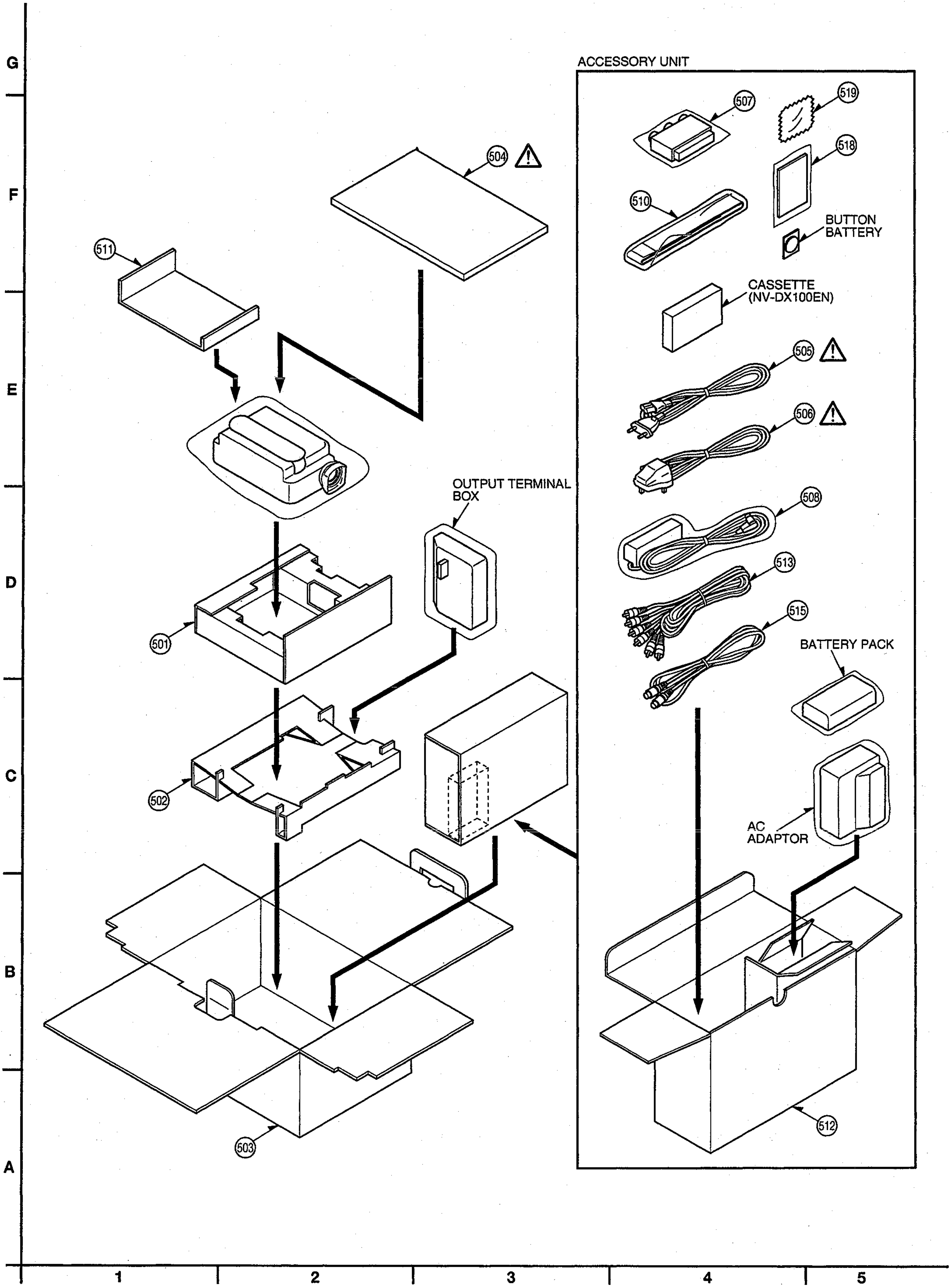

D
C
B
A
1
2
3
4
5
B453
B453
455
464
465
468
W454
468-2
468-1
469
453
470
458
466
452
467
B452
B452
471
W456
W451
454
462
477
472
473
B454
477-2
477-1
475
463
476-1
475-1
B451
457
W455
451
W453
454
W452
476
474
474-1
461
B454
459
B453
460

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
451 (6)	VDG1030	DRIVE PULLEY	1	
452 (6)	VDG1031	CENTER PULLEY	1	
453 (6)	VDG1032	SENSOR GEAR	1	
454 (6)	VDV0265	TIMING BELT	1	
455 (6)	VMA9178	PINCH PRESSURE PLATE	1	
457 (6)	VMA9181	BRAKE ROD SUPPORT (T)	1	
458 (6)	VMB2776	SPRING	1	
459 (6)	VSH0067	MIC SWITCH	1	
460 (6)	VSJ0114	SOLENOID	1	
461 (6)	VXA5401	BRAKE ROD UNIT	1	
462 (6)	VXA5408	T3 ROD UNIT	1	
463 (6)	VXA5411	LED HOLDER UNIT	1	
464 (6)	VXA5412	COVER PLATE UNIT	1	
465 (6)	VXL2454	P IDLER ARM UNIT	1	
466 (6)	VXL2455	FR IDLER ARM UNIT	1	
467 (6)	VXL2456	TENSION ARM UNIT	1	
468 (6)	VXL2732	PAD ARM UNIT	1	
468-1 (6)	VMB2788	TENSION SPRING	1	
468-2 (6)	VMB2787	PAD ARM SPRING	1	
469 (6)	VXL2462	T3 ARM UNIT	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
470 (6)	VXL2464	PINCH ARM UNIT	1	
471 (6)	VXL2466	EJECT ARM UNIT	1	
472 (6)	VXR0347	SUPPLY REEL TABLE	1	
473 (6)	VXR0348	TAKE UP REEL TABLE	1	
474 (6)	VXZ0319	TAKE UP MAIN BRAKE	1	
474-1 (6)	VMB2782	T MAIN BRAKE SPRING	1	
475 (6)	VXZ0321	SUPPLY MAIN BRAKE	1	
475-1 (6)	VMB2783	S MAIN BRAKE SPRING	1	
476 (6)	VXZ0322	FF BRAKE UNIT	1	
476-1 (6)	VMB2784	FF BRAKE SPRING	1	
477 (6)	VXZ0323	REV BRAKE UNIT	1	
477-1 (6)	VMB2786	REV SPRING	1	
477-2 (6)	VMB2785	REV BRAKE SPRING	1	
B451 (6)	VHD0882	SCREW	1	
B452 (6)	XQN14+B15	SCREW	2	
B453 (6)	VHD0883	SCREW	5	
B454 (6)	XQN14+B35	SCREW	3	
W451 (6)	VMX2503	WASHER	1	
W452 (6)	VMX2400	WASHER	1	
W453 (6)	VMX2504	WASHER	1	
W454 (6)	VMX2027	WASHER	3	
W455 (6)	VMX2028	WASHER	1	
W456 (6)	VMX2394	WASHER	1	

❼ PACKING PARTS & ACCESSORIES SECTION


G
F
E
D
C
B
A
1
2
3
4
5
ACCESSORY UNIT
507
519
518
504
510
BUTTON BATTERY
511
CASSETTE (NV-DX100EN)
505
506
OUTPUT TERMINAL BOX
508
513
501
515
BATTERY PACK
502
AC ADAPTOR
512
503

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
501 (7)	VPN4771	CUSHION (UPPER)	1	
502 (7)	VPN4772	CUSHION (LOWER)	1	
503 (7)	VPK2019	PACKING	1	NV-DX100EG
503 (7)	VPK2020	PACKING	1	NV-DX100B
503 (7)	VPK2021	PACKING	1	NV-DX100EN
503 (7)	VPK2071	PACKING	1	NV-DX100ENA
⚠ 504 (7)	VQT7229	OPERATING INSTRUCTIONS	1	NV-DX100EG
		(GERMAN, ENGLISH, FRENCH)		
⚠ 504 (7)	VQT7230	OPERATING INSTRUCTIONS	1	NV-DX100EG
		(ITALIAN, DUTCH, SWEDISH,		
		DANISH)		
⚠ 504 (7)	VQT7231	OPERATING INSTRUCTIONS	1	NV-DX100B
		(ENGLISH)		

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ 504 (7)	VQT7232	OPERATING INSTRUCTIONS	1	NV-DX100EN/ENA
		(CHINESE, ENGLISH, RUSSIAN,		
		ARABIC)		
⚠ 505 (7)	VJA0998	AC CORD	1	NV-DX100EG/EN
⚠ 505 (7)	VJA0940	AC CORD	1	NV-DX100B/EN
⚠ 505 (7)	VJA0754	AC CORD	1	NV-DX100ENA
507 (7)	VFA0151	21 PIN ADAPTOR	1	
508 (7)	VEK8226	DC CABLE U.	1	
510 (7)	VFC2494	SHOULDER BELT	1	
511 (7)	VPN4824	PAD	1	
512 (7)	VPN4724	ACCESSORIES PACKING	1	
513 (7)	VJA0788	AV OUTPUT CABLE	1	
515 (7)	VJA0658	S-VIDEO CABLE	1	
518 (7)	VEQ1995	REMOTE CONTROLLER	1	NV-DX100EG/B
518 (7)	VEQ1997	REMOTE CONTROLLER	1	NV-DX100EN/ENA
519 (7)	VFC1792	LENS CLEANER	1	

4-2. ELECTRICAL REPLACEMENT PARTS LIST

Note: 1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE : Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
3. Unless otherwise specified,
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICROFARADS(uf), P=uuF.
4. The P.C. Board units marked width "■" show below the main assembled parts.
5. The marking (RTL) indicaters the retention time is limited for this item.
After the discontinuation of this assembly in production, it will no longer be available.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP01801C	POWER C.B.A.	1	(RTL)
■	VEP02561A	DRIVE C.B.A.	1	(RTL)
■	VEP03E52A	VTR MAIN C.B.A.	1	(RTL)
■	VEP23443B	CAMERA/MAIN C.B.A.	1	(RTL)
■	VEP20737A	CAMERA OPERATION C.B.A.	1	(RTL)
■	VEP28240D	E.V.F. (A) C.B.A.	1	(RTL)
■	VEP28244B	E.V.F. (B) C.B.A.	1	(RTL)
■	VEP06C28A	HALL SENSOR C.B.A.	1	(RTL)
■	VEP26195B	MONITOR C.B.A.	1	(RTL)
■	VEP00Y65A	LCD/IF C.B.A.	1	(RTL)
■	VEP04684A	FRONT.C.B.A.	1	(RTL)
■	VEP22270A	AWT SENSOR C.B.A.	1	(RTL)
■	VEP06C24A	TOP OPERATION C.B.A.	1	(RTL)
■	VEP06C37A	REAR OPERATION C.B.A.	1	(RTL)
■	VEP22278A	CAMERA SUB C.B.A.	1	(RTL)
■	VEP05352A	HEAD AMP C.B.A.	1	(RTL)
■	VEP01801C	POWER C.B.A.		(RTL)
C1001	ECUM1A335KBM	C.CAPACITOR CH 10V 3.3U	1	
C1002	ECGC1BB150	E.CAPACITOR CH 12.5V 15U	1	
C1003,04	ECUM1C106VB	C.CAPACITOR CH 16V 10U	2	
C1009	ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C1011	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C1012	ECUM1A335KBM	C.CAPACITOR CH 10V 3.3U	1	
C1013	ECUX1E331KBQ	C.CAPACITOR CH 25V 330P	1	
C1014	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	1	
C1015	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C1016-19	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	4	
C1021	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C1022	ECUM1A335KBM	C.CAPACITOR CH 10V 3.3U	1	
C1023	ECUX1E331KBQ	C.CAPACITOR CH 25V 330P	1	
C1024	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	1	
C1025	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C1026-29	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	4	
C1031	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C1032	ECUM1A335KBM	C.CAPACITOR CH 10V 3.3U	1	
C1033	ECUX1E392KBQ	C.CAPACITOR CH 25V 3900P	1	
C1034	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C1035	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C1036	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C1041	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C1042	ECUM1A335KBM	C.CAPACITOR CH 10V 3.3U	1	
C1043	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C1045	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C1046,47	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	2	
C1051	ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C1052	ECUM1E105KBM	C.CAPACITOR CH 25V 1U	1	
C1053	ECUX1E471KBQ	C.CAPACITOR CH 25V 470P	1	
C1055	ECUM1C106VB	C.CAPACITOR CH 16V 10U	1	
C1056	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C1058	ECUM1C106VB	C.CAPACITOR CH 16V 10U	1	
C1059	ECUM1A335KBM	C.CAPACITOR CH 10V 3.3U	1	
C1061	ECUX1E152KBQ	C.CAPACITOR CH 25V 1500P	1	
C1062	ECUX1E332KBQ	C.CAPACITOR CH 25V 3300P	1	
C1063,64	ECUM1A225KBM	C.CAPACITOR CH 10V 2.2U	2	
C1065,66	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	2	
C1071	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C1072	ECUM1A335KBM	C.CAPACITOR CH 10V 3.3U	1	
C1073	ECUX1E331KBQ	C.CAPACITOR CH 25V 330P	1	
C1074	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	1	
C1075	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C1076	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C1101	ECUX1H101JCQ	C.CAPACITOR CH 50V 100P	1	
C1102	ECUM1C334KBN	C.CAPACITOR CH 16V 0.33U	1	
C1103	ECUX1C473KBV	C.CAPACITOR CH 16V 0.047U	1	
C1104	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C1105	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C1106	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C1107	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C1111	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	1	
C1112	ECUX1E471KBQ	C.CAPACITOR CH 25V 470P	1	
C1113	ECUX1H151JCQ	C.CAPACITOR CH 50V 150P	1	
C1114	ECUX1H390JCQ	C.CAPACITOR CH 50V 39P	1	
C1117	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C1118	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C1119	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C1121	ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1122	ECUX1C822KBQ	C.CAPACITOR CH 16V 8200P	1	
C1123	ECUX1H151JCQ	C.CAPACITOR CH 50V 150P	1	
C1124	ECUX1H390JCQ	C.CAPACITOR CH 50V 39P	1	
C1128,29	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	2	
C1131	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	1	
C1132	ECUX1E222KBQ	C.CAPACITOR CH 25V 2200P	1	
C1133	ECUX1H151JCQ	C.CAPACITOR CH 50V 150P	1	
C1134	ECUX1H390JCQ	C.CAPACITOR CH 50V 39P	1	
C1141	ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C1142	ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C1143	ECUX1H151JCQ	C.CAPACITOR CH 50V 150P	1	
C1144	ECUX1H390JCQ	C.CAPACITOR CH 50V 39P	1	
C1151	ECUX1H153KBV	C.CAPACITOR CH 50V 0.015U	1	
C1152	ECUX1C822KBQ	C.CAPACITOR CH 16V 8200P	1	
C1153	ECUX1H151JCQ	C.CAPACITOR CH 50V 150P	1	
C1154	ECUX1H820JCQ	C.CAPACITOR CH 50V 82P	1	
C1155	ECST1AY225Z	T.CAPACITOR CH 10V 2.2U	1	
C1156	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C1157	ECUM0J335KBN	C.CAPACITOR CH 6.3V 3.3U	1	
C1171	ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1172	ECUX1C822KBQ	C.CAPACITOR CH 16V 8200P	1	
C1173	ECUX1H151JCQ	C.CAPACITOR CH 50V 150P	1	
C1174	ECUX1H390JCQ	C.CAPACITOR CH 50V 39P	1	
C1251	ECUM1C106VB	C.CAPACITOR CH 16V 10U	1	
D1051,52	MA729	DIODE	2	
D1061,62	MA728	DIODE	2	
D1101	MA8120-L	DIODE	1	
D1102	MA728	DIODE	1	
D1103	1SS355	DIODE	1	
D1151	MA8160-M	DIODE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D1152	1SS355	DIODE	1	
FP1001	VJS3320B014	CONNECTOR (FEMALE) 14P	1	
IC1001	BA9734AKV	IC	1	
IC1002	TA75S393F	IC	1	
⚠ IP1001	VSF0233F31	FUSE	1	
L1001	ELC5SB3R9M	CHOKE COIL	1	
L1011	ELL6TR560M	CHOKE COIL	1	
L1012	VLQ0810M4R7	COIL 4.7UH	1	
L1013	VLQ0779K100	COIL 10UH	1	
L1014	VLQ0780K100	COIL 10UH	1	
L1015-17	VLQ0779K100	COIL 10UH	3	
L1021	ELL6TR150M	CHOKE COIL	1	
L1022	VLQ0810M4R7	COIL 4.7UH	1	
L1023	VLQ0779M4R7	COIL 4.7UH	1	
L1024	VLQ0779K100	COIL 10UH	1	
L1025	VLQ0780K100	COIL 10UH	1	
L1026	VLQ0779K100	COIL 10UH	1	
L1029	VLQ0779K100	COIL 10UH	1	
L1031	ELL6TR151M	CHOKE COIL	1	
L1032	VLQ0810M4R7	COIL 4.7UH	1	
L1041	ELL6TR101M	CHOKE COIL	1	
L1042	VLQ0810M4R7	COIL 4.7UH	1	
L1043	VLQ0780K100	COIL 10UH	1	
L1051, 52	VLQ0779K331	COIL 330UH	2	
L1054	VLQ0779K100	COIL 10UH	1	
L1061	ELL6TRD003	CHOKE COIL	1	
L1062	ELL6TRD004	CHOKE COIL	1	
L1071	ELL6TR330M	CHOKE COIL	1	
L1072	VLQ0810M4R7	COIL 4.7UH	1	
PP1001	VJP3884B080	CONNECTOR (MALE) 8P	1	
Q1011	FP102	TRANSISTOR	1	
Q1021	FP102	TRANSISTOR	1	
Q1022	2SK2151	TRANSISTOR	1	
Q1031	FP102	TRANSISTOR	1	
Q1041	FP102	TRANSISTOR	1	
Q1042	2SK2151	TRANSISTOR	1	
Q1051	2SA1731-R	TRANSISTOR	1	
Q1052	2SB970X	TRANSISTOR	1	
Q1053	2SD2216	TRANSISTOR	1	
Q1054	XP1401	TRANSISTOR	1	
Q1055	2SD2216	TRANSISTOR	1	
Q1056	2SB1462-R	TRANSISTOR	1	
Q1061, 62	FP102	TRANSISTOR	2	
Q1071	FP102	TRANSISTOR	1	
Q1101	2SB1462-R	TRANSISTOR	1	
QR1001	UN2130X	TRANSISTOR-RESISTOR	1	
QR1002	UN921F	TRANSISTOR-RESISTOR	1	
QR1003	MRN1104	TRANSISTOR-RESISTOR	1	
QR1004	MRN2111	TRANSISTOR-RESISTOR	1	
QR1055	MRN1104	TRANSISTOR-RESISTOR	1	
QR1101	MRN1107	TRANSISTOR-RESISTOR	1	
R1001	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R1003, 04	ERJ2GEJ225	M.RESISTOR CH 1/16W 2.2M	2	
R1005	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R1007	ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
R1008	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R1009	ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
R1010	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1011	ERJ6RBB682	M.RESISTOR CH 1/10W 6.8K	1	
R1012	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1013	ERJ3RBD151	M.RESISTOR CH 1/16W 150	1	
R1014	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	1	
R1015	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R1020	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1021	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	1	
R1022	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1023	ERJ3RBD331	M.RESISTOR CH 1/16W 330	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1024	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	1	
R1025	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R1030	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1031	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	1	
R1032	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1033	ERJ3RED220	M.RESISTOR CH 1/16W 22	1	
R1034	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	1	
R1035	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R1040	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1041	ERJ6RBB152	M.RESISTOR CH 1/10W 1.5K	1	
R1042	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1043	ERJ3RBD301	M.RESISTOR CH 1/16W 300	1	
R1044	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	1	
R1050	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1051	ERJ6RBB273	M.RESISTOR CH 1/10W 27K	1	
R1052	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1053	ERJ3RBD151	M.RESISTOR CH 1/16W 150	1	
R1054	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	1	
R1056	ERJ2GEJ470	M.RESISTOR CH 1/16W 47	1	
R1057	ERJ2RHD133	M.RESISTOR CH 1/16W 13K	1	
R1058	ERJ2RHD361	M.RESISTOR CH 1/16W 360	1	
R1059	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	1	
R1061, 62	ERJ2GEJ122	M.RESISTOR CH 1/16W 1.2K	2	
R1070	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1071	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	1	
R1072	ERJ3RED820	M.RESISTOR CH 1/16W 82	1	
R1073	ERJ3RBD221	M.RESISTOR CH 1/16W 220	1	
R1074	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	1	
R1075	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R1081	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R1101	ERJ3RBD223	M.RESISTOR CH 1/16W 22K	1	
R1102	ERJ6GEYF472	M.RESISTOR CH 1/10W 4.7K	1	
R1103	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R1104	ERJ2GEJ123	M.RESISTOR CH 1/16W 12K	1	
R1105	ERJ2GEJ563	M.RESISTOR CH 1/16W 56K	1	
R1106	ERJ2GEJ273	M.RESISTOR CH 1/16W 27K	1	
R1107	ERJ2GEJ225	M.RESISTOR CH 1/16W 2.2M	1	
R1108	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R1109	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R1111	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R1112	ERJ2GEJ822	M.RESISTOR CH 1/16W 8.2K	1	
R1121	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R1122	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	1	
R1131	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R1132	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	1	
R1136	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R1141	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R1142	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R1150	ERJ8GEYJ680	M.RESISTOR CH 1/8W 68	1	
R1151	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R1152	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R1153	ERJ2RHD123	M.RESISTOR CH 1/16W 12K	1	
R1154	ERJ2RHD473	M.RESISTOR CH 1/16W 47K	1	
R1155	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R1156	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
R1157	ERJ2GEJ272	M.RESISTOR CH 1/16W 2.7K	1	
R1158, 59	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	2	
R1171	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R1172	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R1253-55	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	3	
R1256	ERJ2GEJ224	M.RESISTOR CH 1/16W 220K	1	
T1001	VTP0499	TRANSFORMER	1	
■	VEP02561A	DRIVE C.B.A.		(RTL)
C2201	ECUX1E273KBV	C.CAPACITOR CH 25V 0.027U	1	
C2202	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C2203	ECUX1H270JCQ	C.CAPACITOR CH 50V 27P	1	
C2204	ECUM1A564KBN	C.CAPACITOR CH 10V 0.56U	1	
C2205	ECUX1E332KBQ	C.CAPACITOR CH 25V 3300P	1	
C2207	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C2208	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C2209	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C2210	ECUX1C473KBV	C. CAPACITOR CH 16V 0. 047U	1	
C2211	ECST0JY475Z	T. CAPACITOR CH 6. 3V 4. 7U	1	
C2212-14	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	3	
C2215	ECUM0J335KBN	C. CAPACITOR CH 6. 3V 3. 3U	1	
C2217-19	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	3	
C2223	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C2225	ECUM0J335KBN	C. CAPACITOR CH 6. 3V 3. 3U	1	
C2226, 27	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	2	
C2230	ECUM0J335KBN	C. CAPACITOR CH 6. 3V 3. 3U	1	
C2231	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C2232	ECUM0J335KBN	C. CAPACITOR CH 6. 3V 3. 3U	1	
C2233	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C2234	ECUX1H101JCQ	C. CAPACITOR CH 50V 100P	1	
C2235-37	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	3	
C2238, 39	ECUM0J335KBN	C. CAPACITOR CH 6. 3V 3. 3U	2	
C2240	ECUX1H150JCQ	C. CAPACITOR CH 50V 15P	1	
C2245	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C2246	ECUM1A564KBN	C. CAPACITOR CH 10V 0. 56U	1	
C2247-49	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	3	
C2250-	ECST0JX476Z	T. CAPACITOR CH 6. 3V 47U	1	
C2251	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C2255-57	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	3	
FP2002	VJS3319B022	CONNECTOR (FEMALE) 22P	1	
FP2003	VJS3319B009	CONNECTOR (FEMALE) 9P	1	
FP2004	VJS3320B030	CONNECTOR (FEMALE) 30P	1	
IC2201	TB6519AF	IC	1	
IC2202,-03	MDC05TR	IC	2	
IC2204	TA75S393F	IC	1	
IC2205	TC75W54FU	IC	1	
IC2206	TC7S86FU	IC	1	
IC2207	BA6289F	IC	1	
PS2001	VJS3989C050	CONNECTOR (FEMALE) 50P	1	
Q2201	2SB1462-R	TRANSISTOR	1	
Q2202	2SD2216	TRANSISTOR	1	
R2201	ERJ2GEJ682	M. RESISTOR CH 1/16W 6. 8K	1	
R2202	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R2204	ERJ2GEJ224	M. RESISTOR CH 1/16W 220K	1	
R2205	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2207	ERJ2GEJ561	M. RESISTOR CH 1/16W 560	1	
R2208	ERJ8GEYJR33	M. RESISTOR CH 1/8W 0. 33	1	
R2209	ERJ8GEYJR47	M. RESISTOR CH 1/8W 0. 47	1	
R2210, 11	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	2	
R2212	ERJ8RQJR27	M. RESISTOR CH 1/8W 0. 27	1	
R2213	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R2214	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2215, 16	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R2220	ERJ2RHD104	M. RESISTOR CH 1/16W 100K	1	
R2221	ERJ2RHD431	M. RESISTOR CH 1/16W 430	1	
R2222, 23	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	2	
R2224	ERJ2GEJ182	M. RESISTOR CH 1/16W 1. 8K	1	
R2225	ERJ2GEJ394	M. RESISTOR CH 1/16W 390K	1	
R2226	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2227	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R2228	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R2229	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2231	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R2232	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R2233	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R2234	ERJ2GEJ394	M. RESISTOR CH 1/16W 390K	1	
R2235	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R2236	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	1	
R2237	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R2238	ERJ2GEJ122	M. RESISTOR CH 1/16W 1. 2K	1	
RA2201	EXBV8V331J	RESISTOR-RESISTOR	1	
RA2203	EXBV4V102J	RESISTOR-RESISTOR	1	
		MISCELLANEOUS		
	VMZ2689	INSULATION SHEET	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP03E52A	VTR MAIN C. B. A.		(RTL)
C601	ECST0JX476Z	T. CAPACITOR CH 6. 3V 47U	1	
C602	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C603-10	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	8	
C611-13	ECUX1H103KBV	C. CAPACITOR CH 50V 0. 01U	3	
C614	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C615	ECUX1H181JCQ	C. CAPACITOR CH 50V 180P	1	
C616	ECUX1H680JCQ	C. CAPACITOR CH 50V 68P	1	
C617-19	ECUX1H560JCQ	C. CAPACITOR CH 50V 56P	3	
C620-26	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	7	
C630-32	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	3	
C633	ECST0JX476Z	T. CAPACITOR CH 6. 3V 47U	1	
C634	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C635-42	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	8	
C643-45	ECUX1H103KBV	C. CAPACITOR CH 50V 0. 01U	3	
C646	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C647	ECUX1H181JCQ	C. CAPACITOR CH 50V 180P	1	
C648	ECUX1H680JCQ	C. CAPACITOR CH 50V 68P	1	
C649-51	ECUX1H560JCQ	C. CAPACITOR CH 50V 56P	3	
C652-58	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	7	
C662-65	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	4	
C666	ECUM1C106VB	C. CAPACITOR CH 16V 10U	1	
C667	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C668	EEJK0JS106	E. CAPACITOR 6. 3V 10U	1	
C669	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C671, 72	VCS0JJ106	E. CAPACITOR 6. 3V 10U	2	
C2001, 02	ECUX1H100CCQ	C. CAPACITOR CH 50V 10P	2	
C2003-05	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	3	
C2006	ECUX1H120JCQ	C. CAPACITOR CH 50V 12P	1	
C2007	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C2008	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C2009	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C2010	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C2011	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C2012	ECUX1C473KBV	C. CAPACITOR CH 16V 0. 047U	1	
C2013	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C2014	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C2015	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C2016	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C2017	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C2018	ECST0JY475Z	T. CAPACITOR CH 6. 3V 4. 7U	1	
C2019	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C2020	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C2021	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C2022	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C2023-25	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	3	
C2026	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C2027	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C2028	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C2029	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C2030	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C2031, 32	ECUX1H221JCQ	C. CAPACITOR CH 50V 220P	2	
C2033	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C2034	ECST1CY225Z	T. CAPACITOR CH 16V 2. 2U	1	
C2035, 36	ECUX1H100CCQ	C. CAPACITOR CH 50V 10P	2	
C2037	ECUX1H330JCQ	C. CAPACITOR CH 50V 33P	1	
C2038	ECUX1H150JCQ	C. CAPACITOR CH 50V 15P	1	
C2040	ECUX1H120JCQ	C. CAPACITOR CH 50V 12P	1	
C2041	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C2042	ECUM1C106VB	C. CAPACITOR CH 16V 10U	1	
C2199	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C3002	EEJK0JS106	E. CAPACITOR 6. 3V 10U	1	
C3003	ECUX1H150JCQ	C. CAPACITOR CH 50V 15P	1	
C3004	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C3005-09	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	5	
C3010-13	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	4	
C3015	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C3016	ECUX1A104KBQ	C. CAPACITOR CH 10V 0. 1U	1	
C3017	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C3018	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C3019	ECUX1A104KBQ	C. CAPACITOR CH 10V 0. 1U	1	
C3020	ECUX1H100CCQ	C. CAPACITOR CH 50V 10P	1	
C3021	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C3022	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3023	ECST0GY226Z	T.CAPACITOR CH 4V 22U	1	
C3024	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3026	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C3027	ECUX1H050CCQ	C.CAPACITOR CH 50V 5P	1	
C3028	ECUX1E561KBQ	C.CAPACITOR CH 25V 560P	1	
C3030	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3035	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3036	ECUX1H100CCQ	C.CAPACITOR CH 50V 10P	1	
C3037	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C3038,39	ECUX1H101JCQ	C.CAPACITOR CH 50V 100P	2	
C3040,41	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	2	
C3042	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3043-48	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	6	
C3050,51	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	2	
C3053,54	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	2	
C3055-58	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	4	
C3060,61	ECUX1H150JCQ	C.CAPACITOR CH 50V 15P	2	
C3065	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	1	
C3066	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3067	ECST0JX226Z	T.CAPACITOR CH 6.3V 22U	1	
C3071,72	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	2	
C3073-77	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	5	
C3078,79	ECUX1H050CCQ	C.CAPACITOR CH 50V 5P	2	
C3080	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C3081	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3083,84	ECST0JX226Z	T.CAPACITOR CH 6.3V 22U	2	
C3086	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	1	
C3088	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3089	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C3090	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3091	ECST0JX226Z	T.CAPACITOR CH 6.3V 22U	1	
C3092	ECUX1A105ZFV	C.CAPACITOR CH 10V 1U	1	
C3094	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C3096	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C3201,02	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	2	
C3203,04	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	2	
C3205	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C3206,07	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	2	
C3208	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C3209-11	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	3	
C3212,13	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	2	
C3214	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	1	
C3215	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C3216-18	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	3	
C3219	ECUX1E273KBV	C.CAPACITOR CH 25V 0.027U	1	
C3220-22	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	3	
C3223	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C3224	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C3225-27	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	3	
C3228	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C3229	ECUX1E331KBQ	C.CAPACITOR CH 25V 330P	1	
C3230	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3231	ECUX1E152KBQ	C.CAPACITOR CH 25V 1500P	1	
C3232-34	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	3	
C3235	ECUX1E681KBQ	C.CAPACITOR CH 25V 680P	1	
C3236-38	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	3	
C3239	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C3240	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3241,42	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	2	
C3243-45	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	3	
C3246	ECUM0J225KBN	C.CAPACITOR CH 6.3V 2.2U	1	
C3247-52	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	6	
C3253	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C3254,55	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	2	
C3256	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3257	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C3258	ECST0JX476Z	T.CAPACITOR CH 6.3V 47U	1	
C3259	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	1	
C3261	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	1	
C3262	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3264	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C3265	ECUX1H220JCQ	C.CAPACITOR CH 50V 22P	1	
C3802-04	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	3	
C3806	ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C3807	ECUX1A105ZFV	C.CAPACITOR CH 10V 1U	1	
C3808	ECUX1E271KBQ	C.CAPACITOR CH 25V 270P	1	
C3809	ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C3813	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
C3814	ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C3816	ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C3817,18	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	2	
C3820	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	1	
C3822	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	1	
C3824-26	EEJK0JS106	E.CAPACITOR 6.3V 10U	3	
C3827	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C3901	ECST0JC107Z	T.CAPACITOR CH 6.3V 100U	1	
C3902	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C4001	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C4002	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C4003,04	VCS0JJ106	E.CAPACITOR 6.3V 10U	2	
C4005,06	ECUX1E152KBQ	C.CAPACITOR CH 25V 1500P	2	
C4007	ECST0JX226Z	T.CAPACITOR CH 6.3V 22U	1	
C4011	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C4012	VCS0JJ106	E.CAPACITOR 6.3V 10U	1	
C4013,14	ECUX1H121JCQ	C.CAPACITOR CH 50V 120P	2	
C4015,16	VCS0JJ106	E.CAPACITOR 6.3V 10U	2	
C4201,02	ECUX1C333KBQ	C.CAPACITOR CH 16V 0.033U	2	
C4203	VCS0JJ106	E.CAPACITOR 6.3V 10U	1	
C4204	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C4205	ECUX1E222KBQ	C.CAPACITOR CH 25V 2200P	1	
C4206	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C4207	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	1	
C4208	ECUX1E122KBQ	C.CAPACITOR CH 25V 1200P	1	
C4209,10	ECUM1C474KBN	C.CAPACITOR CH 16V 0.47U	2	
C4211	ECUX1E122KBQ	C.CAPACITOR CH 25V 1200P	1	
C4212,13	ECST0JX476Z	T.CAPACITOR CH 6.3V 47U	2	
C4214,15	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	2	
C4218	VCS0JJ106	E.CAPACITOR 6.3V 10U	1	
C4219	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C4501	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C4502	ECUX1C104ZFQ	C.CAPACITOR CH 16V 0.1U	1	
C4503-05	VCS0JJ106	E.CAPACITOR 6.3V 10U	3	
C4506	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C4507	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C4508	ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C4509,10	VCS0JJ106	E.CAPACITOR 6.3V 10U	2	
C4511	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C4512	ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C4513,14	VCS0JJ106	E.CAPACITOR 6.3V 10U	2	
C4515	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C4701	ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C4702	VCS0JJ106	E.CAPACITOR 6.3V 10U	1	
C4704	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C4705	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C4706	ECUX1H153KBV	C.CAPACITOR CH 50V 0.015U	1	
C4798,99	ECUX1H153KBV	C.CAPACITOR CH 50V 0.015U	2	
C6501	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C6502,03	ECUM1C106VB	C.CAPACITOR CH 16V 10U	2	
C6504	ECEV1CA101U	E.CAPACITOR CH 16V 100U	1	
C6507	ECUX1C822KBQ	C.CAPACITOR CH 16V 8200P	1	
D2001-04	MA728	DIODE	4	
D2005	1SS355	DIODE	1	
D2006	MA133	DIODE	1	
D2007	1SS355	DIODE	1	
D2010	MA728	DIODE	1	
D2011	MA132WK	DIODE	1	
D2012	MA132WA	DIODE	1	
D2013	MA728	DIODE	1	
D2015-18	MA728	DIODE	4	
D2020-22	MA728	DIODE	3	
D2023	1SS355	DIODE	1	
D2024,25	MA728	DIODE	2	
D3201	MA132WA	DIODE	1	
D3202	MA728	DIODE	1	
D4001	MA133	DIODE	1	
D4002	MA728	DIODE	1	
D6501-04	MA132WA	DIODE	4	
D6505	MA132A	DIODE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D6506	MA132WA	DIODE	1	
FP3201	VJS3320B024	CONNECTOR (FEMALE) 24P	1	
FP4001	VJS3319B013	CONNECTOR (FEMALE) 13P	1	
FP6001	VJS3319B014	CONNECTOR (FEMALE) 14P	1	
FP6002	VJS3319B016	CONNECTOR (FEMALE) 16P	1	
IC601, 02	IR3Y35M	IC	2	
IC603	NJM78L12UA	IC	1	
IC604	BU4053BCFV	IC	1	
IC605	PQ20VZ1U	IC	1	
IC606	XC62AP2802M	IC	1	
IC2001	M31020MA107	IC	1	
IC2002	S3511AEFS	IC	1	
IC2003	UPD6462GS626	IC	1	
IC2004	S81333HGKF	IC	1	
IC2005	S29L330AFS	IC	1	
IC2006	M62370GP	IC	1	
IC2007	TA75W393FU	IC	1	
IC2008	TA75S393F	IC	1	
IC2009	S81238SGQ8	IC	1	
IC2010	XC61AN2901MR	IC	1	
IC2011	D784037GK510	IC	1	
IC2012	TC4W53FU	IC	1	
IC2013	MM1320ENRE	IC	1	
IC2014, 15	TC4W53FU	IC	2	
IC3001	T9P74EF	IC	1	
IC3002	MN47V07AF	IC	1	
IC3003	MN67373	IC	1	
IC3004	BA7653AF	IC	1	
IC3005	BH7086KV	IC	1	
IC3006	NJM2538V	IC	1	
IC3007	LZ9FC144	IC	1	
IC3201	M65500FP	IC	1	
IC3202	MNV4260	IC	1	
IC3203	AN3741FAP	IC	1	
IC3204	AD9057BRS-60	IC	1	
IC3205	TC7SH08FU	IC	1	
IC3801	----------	CSP IC	1	
IC4001	NJM3414AV	IC	1	
IC4201	BA7785FS	IC	1	
IC4501	AK4513	IC	1	
IC4701	M9802-206GAK	IC	1	
IC6501-03	TC7W241FU	IC	3	
IC6505, 06	TC7SH08FU	IC	2	
JK3801	VJJ0568	DV TERMINAL	1	
L601-03	VLQ0807K100	COIL 10UH	3	
L605	VLQ0807K100	COIL 10UH	1	
L606, 07	VLQ0807K220	COIL 22UH	2	
L2001	VLQ0807K100	COIL 10UH	1	
L2002	VLQ0426J330	COIL 33UH	1	
L2003	VLQ0807K100	COIL 10UH	1	
L3002	VLQ0426J5R6	COIL 5. 6UH	1	
L3003, 04	VLQ0807K100	COIL 10UH	2	
L3005	VLQ0807K220	COIL 22UH	1	
L3006	VLQ0807K100	COIL 10UH	1	
L3008	VLQ0807K100	COIL 10UH	1	
L3009	VLQ0426J100	COIL 10UH	1	
L3010, 11	VLQ0807K100	COIL 10UH	2	
L3201	VLQ0807K100	COIL 10UH	1	
L3202	VLQ0807M4R7	COIL 4. 7UH	1	
L3203-07	VLQ0807K100	COIL 10UH	5	
L3208	VLQ0807K220	COIL 22UH	1	
L3209	VLQ0807M4R7	COIL 4. 7UH	1	
L3801-03	VLQ0807K100	COIL 10UH	3	
L3901	VLQ0807K220	COIL 22UH	1	
L4001	VLQ0807K100	COIL 10UH	1	
L4201	VLQ0807K100	COIL 10UH	1	
L4202	VLQ0464K100	COIL 10UH	1	
L4502	VLQ0807K100	COIL 10UH	1	
L6501	VLQ0807K100	COIL 10UH	1	
L6502	VLQ0807K220	COIL 22UH	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB3001-03	VLP0145	COIL	3	
LB3004	VLP0155	COIL	1	
LB3005, 06	VLP0329A601	COIL	2	
LB3007	VLP0329A241	COIL	1	
P3001	VJP3172D002	CONNECTOR (MALE) 2P	1	
PP2001	VJP3989C050	CONNECTOR (MALE) 50P	1	
PP3001	VJP3884B060	CONNECTOR (MALE) 60P	1	
PP3002	VJP3989C070	CONNECTOR (MALE) 70P	1	
PS1001	VJS3846A080	CONNECTOR (FEMALE) 80P	1	
PS3001	VJS3846A030	CONNECTOR (FEMALE) 30P	1	
PS3002	VJS3846A080	CONNECTOR (FEMALE) 80P	1	
Q601-06	2SB970X	TRANSISTOR	6	
Q608	2SB970X	TRANSISTOR	1	
Q609-11	2SD2216	TRANSISTOR	3	
Q2001	2SB970X	TRANSISTOR	1	
Q2002	2SB1218	TRANSISTOR	1	
Q2003	2SD1820	TRANSISTOR	1	
Q2006	2SD2216	TRANSISTOR	1	
Q2008	XP6501	TRANSISTOR	1	
Q3001, 02	2SD2216	TRANSISTOR	2	
Q3201	2SD2216	TRANSISTOR	1	
Q3202	2SB1462-R	TRANSISTOR	1	
Q3203	2SC4627	TRANSISTOR	1	
Q3204	2SD2216	TRANSISTOR	1	
Q4001	XN4504	TRANSISTOR	1	
Q4701	2SD1979	TRANSISTOR	1	
Q4702	XP4401	TRANSISTOR	1	
QR601	MRN1103	TRANSISTOR-RESISTOR	1	
QR602	MRN1104	TRANSISTOR-RESISTOR	1	
QR604-06	MRN1103	TRANSISTOR-RESISTOR	3	
QR607	XP4314	TRANSISTOR	1	
QR2001	MRN2111	TRANSISTOR-RESISTOR	1	
QR2002, 03	XP4213	TRANSISTOR-RESISTOR	2	
QR2004	MRN2111	TRANSISTOR-RESISTOR	1	
QR2005	UN2130X	TRANSISTOR-RESISTOR	1	
QR2006	MRN2111	TRANSISTOR-RESISTOR	1	
QR2007	MRN1104	TRANSISTOR-RESISTOR	1	
QR2008	XP1213	TRANSISTOR-RESISTOR	1	
QR2009, 10	MRN2111	TRANSISTOR-RESISTOR	2	
QR2011	MRN1104	TRANSISTOR-RESISTOR	1	
QR2012, 13	MRN1103	TRANSISTOR-RESISTOR	2	
QR3001	MRN1103	TRANSISTOR-RESISTOR	1	
QR4001	MRN1103	TRANSISTOR-RESISTOR	1	
QR4002, 03	MRN2103	TRANSISTOR-RESISTOR	2	
QR4201	MRN1103	TRANSISTOR-RESISTOR	1	
QR4703	XP4312	TRANSISTOR-RESISTOR	1	
R507-12	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	6	
R513	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R521	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R522	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	1	
R523	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R524	ERJ2GEJ332	M. RESISTOR CH 1/16W 3. 3K	1	
R525	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R526	ERJ2GEJ153	M. RESISTOR CH 1/16W 15K	1	
R527-32	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	6	
R600, 01	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	2	
R602, 03	ERJ2RHD102	M. RESISTOR CH 1/16W 1K	2	
R604	ERJ2RHD272	M. RESISTOR CH 1/16W 2. 7K	1	
R605	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R606	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R607	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R608	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	1	
R609, 10	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	2	
R611	ERJ2GEJ393	M. RESISTOR CH 1/16W 39K	1	
R612	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R613	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R614, 15	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	2	
R616	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R617	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R619	ERJ2GEJ332	M. RESISTOR CH 1/16W 3. 3K	1	
R621	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R622	ERJ2GEJ332	M. RESISTOR CH 1/16W 3. 3K	1	
R623	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R624	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R625	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R626	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R629	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R631	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R634	ERJ2GEJ183	M. RESISTOR CH 1/16W 18K	1	
R635-37	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	3	
R638	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R639	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	1	
R640	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R642	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R644-46	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	3	
R647	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R648-50	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	3	
R651, 52	ERJ2GEJ683	M. RESISTOR CH 1/16W 68K	2	
R653	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R656-58	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	3	
R659	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R661	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
R663	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
R664	ERJ2RHD821	M. RESISTOR CH 1/16W 820	1	
R665	ERJ2RHD223	M. RESISTOR CH 1/16W 22K	1	
R666	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R667	ERJ2RHD472	M. RESISTOR CH 1/16W 4. 7K	1	
R673	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R674	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R675	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R680	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R681	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R682	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	1	
R683	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R685	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R690	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R691-93	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	3	
R694, 95	ERJ2GEJ683	M. RESISTOR CH 1/16W 68K	2	
R696	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R697-99	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	3	
R2002	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R2003	ERJ2GEJ220	M. RESISTOR CH 1/16W 22	1	
R2004, 05	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	2	
R2006, 07	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R2008	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R2009	ERJ2GEJ394	M. RESISTOR CH 1/16W 390K	1	
R2011	ERJ2GEJ563	M. RESISTOR CH 1/16W 56K	1	
R2012	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2013	ERJ2GEJ684	M. RESISTOR CH 1/16W 680K	1	
R2014	ERJ2GEJ474	M. RESISTOR CH 1/16W 470K	1	
R2015	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2016	ERJ2GEJ563	M. RESISTOR CH 1/16W 56K	1	
R2017, 18	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2019, 20	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	2	
R2021	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R2022	ERJ2GEJ332	M. RESISTOR CH 1/16W 3. 3K	1	
R2023	ERJ2GEJ393	M. RESISTOR CH 1/16W 39K	1	
R2024	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2025	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R2026	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R2027	ERJ8GEYG330	M. RESISTOR CH 1/8W 33	1	
R2028	ERJ2GEJ681	M. RESISTOR CH 1/16W 680	1	
R2029	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2031	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2033	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R2034	ERJ2GEJ123	M. RESISTOR CH 1/16W 12K	1	
R2035	ERJ2RHD183	M. RESISTOR CH 1/16W 18K	1	
R2036	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R2037	ERJ2RHD223	M. RESISTOR CH 1/16W 22K	1	
R2038	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2039	ERJ2RHD333	M. RESISTOR CH 1/16W 93K	1	
R2040	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R2041	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R2042	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R2043, 44	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2045	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R2046	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2047	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2048	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2049, 50	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	2	
R2052	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2053	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R2054	ERJ2GEJ822	M. RESISTOR CH 1/16W 8. 2K	1	
R2055, 56	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2057	ERJ2GEJ822	M. RESISTOR CH 1/16W 8. 2K	1	
R2058	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2059	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2060	ERJ2RHD273	M. RESISTOR CH 1/16W 27K	1	
R2061	ERJ2RHD103	M. RESISTOR CH 1/16W 10K	1	
R2062, 63	ERJ2RHD473	M. RESISTOR CH 1/16W 47K	2	
R2064	ERJ2RHD273	M. RESISTOR CH 1/16W 27K	1	
R2065	ERJ2RHD103	M. RESISTOR CH 1/16W 10K	1	
R2066	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2067, 68	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	2	
R2069	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R2070	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	1	
R2072	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2073, 74	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R2076, 77	ERJ2GEJ272	M. RESISTOR CH 1/16W 2. 7K	2	
R2078, 79	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R2080	ERJ2RHD563	M. RESISTOR CH 1/16W 56K	1	
R2081	ERJ2GEJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R2082	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R2083	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2085	ERJ2GEJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R2087	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2088	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2089	ERJ2GEJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R2090, 91	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2092	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2093	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2095	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2096	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2097	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2098-04	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	7	
R2106	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2107	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2108	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R2109	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2110	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R2113	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R2114, 15	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	2	
R2116	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R2117	ERJ2GEJ392	M. RESISTOR CH 1/16W 3. 9K	1	
R2118	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
R2119	ERJ2GEJ272	M. RESISTOR CH 1/16W 2. 7K	1	
R2121	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	1	
R2122	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2123	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2124, 25	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	2	
R2126	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R2127	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2128	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2129	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2130	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2133	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2134	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2135	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R2136-38	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	3	
R2139	ERJ2GEJ681	M. RESISTOR CH 1/16W 680	1	
R2140	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2141, 42	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2143	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2199	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R3001, 02	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	2	
R3003, 04	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	2	
R3005	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3006	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R3008	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3009	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3010	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3011, 12	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	2	
R3013	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3014	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3016	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R3017-19	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	3	
R3020	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3022	ERJ2GEJ121	M. RESISTOR CH 1/16W 120	1	
R3023	ERJ2GEJ682	M. RESISTOR CH 1/16W 6. 8K	1	
R3024	ERJ2GEJ332	M. RESISTOR CH 1/16W 3. 3K	1	
R3027	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R3028	ERJ2GEJ183	M. RESISTOR CH 1/16W 18K	1	
R3030	ERJ2GEJ123	M. RESISTOR CH 1/16W 12K	1	
R3031	ERJ2GEJ153	M. RESISTOR CH 1/16W 15K	1	
R3032	ERJ2GEJ123	M. RESISTOR CH 1/16W 12K	1	
R3033	ERJ2GEJ153	M. RESISTOR CH 1/16W 15K	1	
R3034	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3035	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3036	ERJ2GEJ225	M. RESISTOR CH 1/16W 2. 2M	1	
R3037	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3038, 39	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	2	
R3041	ERJ2GEJ151	M. RESISTOR CH 1/16W 150	1	
R3042	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R3044	ERJ2GEJ221	M. RESISTOR CH 1/16W 220	1	
R3046	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3048, 49	ERJ2GEJ221	M. RESISTOR CH 1/16W 220	2	
R3050, 51	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	2	
R3052	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R3053	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3054	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R3055, 56	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	2	
R3057	ERJ2GEJ224	M. RESISTOR CH 1/16W 220K	1	
R3058	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3059	ERJ2GEJ680	M. RESISTOR CH 1/16W 68	1	
R3060	ERJ2GEJ271	M. RESISTOR CH 1/16W 270	1	
R3061	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3062	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3075	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3076	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R3078	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R3079	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R3083	ERJ2GEJ121	M. RESISTOR CH 1/16W 120	1	
R3085	ERJ2GEJ121	M. RESISTOR CH 1/16W 120	1	
R3086	ERJ2GEJ682	M. RESISTOR CH 1/16W 6. 8K	1	
R3090, 91	ERJ2GEJ392	M. RESISTOR CH 1/16W 3. 9K	2	
R3094	ERJ2GEJ391	M. RESISTOR CH 1/16W 390	1	
R3203	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R3204	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3205	ERJ2RHD222	M. RESISTOR CH 1/16W 2. 2K	1	
R3206, 07	ERJ2GEJ121	M. RESISTOR CH 1/16W 120	2	
R3208	ERJ2GEJ822	M. RESISTOR CH 1/16W 8. 2K	1	
R3209	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R3210	ERJ2GEJ561	M. RESISTOR CH 1/16W 560	1	
R3211	ERJ2GEJ680	M. RESISTOR CH 1/16W 68	1	
R3212	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3213	ERJ2GEJ682	M. RESISTOR CH 1/16W 6. 8K	1	
R3214	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3215	ERJ2GEJ392	M. RESISTOR CH 1/16W 3. 9K	1	
R3217	ERJ2RHD181	M. RESISTOR CH 1/16W 180	1	
R3218	ERJ2RHD301	M. RESISTOR CH 1/16W 300	1	
R3219	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3220	ERJ2GEJ221	M. RESISTOR CH 1/16W 220	1	
R3221	ERJ2RHD222	M. RESISTOR CH 1/16W 2. 2K	1	
R3222	ERJ2GEJ152	M. RESISTOR CH 1/16W 1. 5K	1	
R3223	ERJ2GEJ124	M. RESISTOR CH 1/16W 120K	1	
R3224	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R3225	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R3226	ERJ2GEJ391	M. RESISTOR CH 1/16W 390	1	
R3227, 28	ERJ2GEJ224	M. RESISTOR CH 1/16W 220K	2	
R3229	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3230	ERJ2GEJ121	M. RESISTOR CH 1/16W 120	1	
R3231	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3232	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3233	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3234	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3235-37	ERJ2GEJ392	M. RESISTOR CH 1/16W 3. 9K	3	
R3238	ERJ2GEJ564	M. RESISTOR CH 1/16W 560K	1	
R3239	ERJ2GEJ563	M. RESISTOR CH 1/16W 56K	1	
R3240	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
R3241	ERJ2GEJ392	M. RESISTOR CH 1/16W 3. 9K	1	
R3242	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R3243-45	ERJ2GEJ392	M. RESISTOR CH 1/16W 3. 9K	3	
R3247	ERJ2GEJ152	M. RESISTOR CH 1/16W 1. 5K	1	
R3248	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3249	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R3251	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R3252	ERJ2RHD391	M. RESISTOR CH 1/16W 390	1	
R3254	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3255	ERJ2GEJ683	M. RESISTOR CH 1/16W 68K	1	
R3801	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3803	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3804	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3805	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
R3806	ERJ2GEJ394	M. RESISTOR CH 1/16W 390K	1	
R3807	ERJ2RHD272	M. RESISTOR CH 1/16W 2. 7K	1	
R3809	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3811-14	ERJ2RKD560	M. RESISTOR CH 1/16W 56	4	
R3815	ERJ2RHD332	M. RESISTOR CH 1/16W 3. 3K	1	
R3816	ERJ2GEJ391	M. RESISTOR CH 1/16W 390	1	
R3834	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R3841, 42	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R3844	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R3845	ERJ2GEJ270	M. RESISTOR CH 1/16W 27	1	
R4001, 02	ERJ2RHD273	M. RESISTOR CH 1/16W 27K	2	
R4003, 04	ERJ2RHD822	M. RESISTOR CH 1/16W 8. 2K	2	
R4011, 12	ERJ2RHD103	M. RESISTOR CH 1/16W 10K	2	
R4013, 14	ERJ2RHD223	M. RESISTOR CH 1/16W 22K	2	
R4015, 16	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	2	
R4017, 18	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	2	
R4021	ERJ2GEJ124	M. RESISTOR CH 1/16W 120K	1	
R4022	ERJ2GEJ681	M. RESISTOR CH 1/16W 680	1	
R4201, 02	ERJ2GEJ682	M. RESISTOR CH 1/16W 6. 8K	2	
R4203, 04	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R4205	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R4211	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R4501	ERJ2GEJ100	M. RESISTOR CH 1/16W 10	1	
R4502, 03	ERJ2RHD471	M. RESISTOR CH 1/16W 470	2	
R4504	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R4506, 07	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	2	
R4701	ERJ2GEJ154	M. RESISTOR CH 1/16W 150K	1	
R4702	ERJ2RHD223	M. RESISTOR CH 1/16W 22K	1	
R4704	ERJ2GEJ392	M. RESISTOR CH 1/16W 3. 9K	1	
R4705	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R4707	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R4708	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R4709	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R4710	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R4711, 12	ERJ2GEJ182	M. RESISTOR CH 1/16W 1. 8K	2	
R4798	ERJ2GEJ154	M. RESISTOR CH 1/16W 150K	1	
R4799	ERJ2GEJ563	M. RESISTOR CH 1/16W 56K	1	
R6503	ERJ8GEY0R00	M. RESISTOR CH 1/8W 0	1	
R6504	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R6505, 06	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	2	
R6510	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R6515	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
RA2001	EXB28V102J	RESISTOR-RESISTOR	1	
RA2002	EXB24V102J	RESISTOR-RESISTOR	1	
RA2003	EXB28V473J	RESISTOR-RESISTOR	1	
RA2005-08	EXB28V103J	RESISTOR-RESISTOR	4	
RA2011	EXB24V102J	RESISTOR-RESISTOR	1	
RA2012	EXB28V473J	RESISTOR-RESISTOR	1	
RA2013	EXB24V331J	RESISTOR-RESISTOR	1	
RA2014	EXB24V271J	RESISTOR-RESISTOR	1	
RA2016	EXB24V102J	RESISTOR-RESISTOR	1	
RA2018	EXB24V332J	RESISTOR-RESISTOR	1	
RA2023	EXB28V102J	RESISTOR-RESISTOR	1	
RA2024	EXB24V472J	RESISTOR-RESISTOR	1	
RA3803-05	EXB24V103J	RESISTOR-RESISTOR	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
RA3806, 07	EXB28V103J	RESISTOR-RESISTOR	2	
RA3808, 09	EXB24V103J	RESISTOR-RESISTOR	2	
RA4001	EXB24V562J	RESISTOR-RESISTOR	1	
X2001	VSX0847	CRYSTAL OSCILLATOR	1	
X2002	VSX0885	CRYSTAL OSCILLATOR	1	
X2003	VSX0872	CERAMIC OSCILLATOR	1	
X3001	VSX0848	CRYSTAL OSCILLATOR	1	
X3003	VSX0846	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
	VWJ13C8045AA	FLAT CARD CABLE	1	
	VWJ16C8050AA	FLAT CARD CABLE	1	
	VMZ2759	BARRIER	1	
■	VEP23443B	CAMERA/MAIN C.B.A.		(RTL)
C301, 02	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	2	
C303	ECST0GY226Z	T. CAPACITOR CH 4V 22U	1	
C304	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C305	ECUX1C153KBQ	C. CAPACITOR CH 16V 0. 015U	1	
C306	ECST0GY226Z	T. CAPACITOR CH 4V 22U	1	
C307	ECUX1H151JCQ	C. CAPACITOR CH 50V 150P	1	
C308	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C309	ECST0GY226Z	T. CAPACITOR CH 4V 22U	1	
C310	ECUX1C153KBQ	C. CAPACITOR CH 16V 0. 015U	1	
C311, 12	ECUX1H180JCQ	C. CAPACITOR CH 50V 18P	2	
C313	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C314	ECST0GY226Z	T. CAPACITOR CH 4V 22U	1	
C315	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C316	ECST0GY226Z	T. CAPACITOR CH 4V 22U	1	
C317	ECST0JY156Z	T. CAPACITOR CH 6. 3V 15U	1	
C318-20	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	3	
C321	ECST0GY226Z	T. CAPACITOR CH 4V 22U	1	
C322	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C323	ECST0JY156Z	T. CAPACITOR CH 6. 3V 15U	1	
C324-31	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	8	
C332	ECST0GY226Z	T. CAPACITOR CH 4V 22U	1	
C333	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C334	ECUX1C153KBQ	C. CAPACITOR CH 16V 0. 015U	1	
C335	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C336	ECUX1E561KBQ	C. CAPACITOR CH 25V 560P	1	
C337	ECUX1E681KBQ	C. CAPACITOR CH 25V 680P	1	
C347	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C701	ECUX1E332KBQ	C. CAPACITOR CH 25V 3300P	1	
C702, 03	ECST0JY156Z	T. CAPACITOR CH 6. 3V 15U	2	
C704	ECUX1A105ZFV	C. CAPACITOR CH 10V 1U	1	
C705	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C706	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C707	ECUX1C153KBQ	C. CAPACITOR CH 16V 0. 015U	1	
C708	ECUX1E392KBQ	C. CAPACITOR CH 25V 3900P	1	
C709	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C711	ECUM1C106VB	C. CAPACITOR CH 16V 10U	1	
C712	ECUX1H390JCQ	C. CAPACITOR CH 50V 39P	1	
C713	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C714	ECUX1C822KBQ	C. CAPACITOR CH 16V 8200P	1	
C715	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C716	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C717	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C718	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C719	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C720	ECUX1C153KBQ	C. CAPACITOR CH 16V 0. 015U	1	
C721	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C722	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C724	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C725, 26	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	2	
C727	ECUX1A224KBV	C. CAPACITOR CH 10V 0. 22U	1	
C728	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
D301-03	MA728	DIODE	3	
D304, 05	1SS355	DIODE	2	
FP301	VJS3971D051	CONNECTOR (FEMALE) 51P	1	
FP305	VJS3320B012	CONNECTOR (FEMALE) 12P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
FP701	VJS3320B022	CONNECTOR (FEMALE) 18P	1	
IC301	MN673432	IC	1	
IC302	MN673442	IC	1	
IC303, 04	MN4795F	IC	2	
IC305	MN1021617AA	IC	1	
IC308	T74VHC08FS	IC	1	
IC311, 12	TC7SH14FU	IC	2	
IC701	T9P45AF	IC	1	
IC702	TA8487F	IC	1	
IC703	TB6526F	IC	1	
IC704	NJM2115VA	IC	1	
IC705	TA75W01FU	IC	1	
IC706	NJM2112V	IC	1	
L303-05	VLQ0807K100	COIL 10UH	3	
L306, 07	VLQ0780K330	COIL 33UH	2	
L308	VLQ0807K100	COIL 10UH	1	
L313, 14	VLQ0807K100	COIL 10UH	2	
L315	VLQ0779M6R8	COIL 6. 8UH	1	
L701, 02	VLQ0807K100	COIL 10UH	2	
L703	VLQ0779K470	COIL 47UH	1	
L704-06	VLQ0807K100	COIL 10UH	3	
LB301-07	VLP0355A102	COIL	7	
LB308	VLF1144A102	COIL 1000UH	1	
LB309	VLP0355A102	COIL	1	
LB310-12	VLF1144A102	COIL 1000UH	3	
PP301	VJP3884B080	CONNECTOR (MALE) 8P	1	
PP302	VJP3847D030	CONNECTOR (MALE) 3P	1	
Q301	2SD2216	TRANSISTOR	1	
Q701-03	XN4404	TRANSISTOR	3	
Q704	2SD601A	TRANSISTOR	1	
Q706	XP4501	TRANSISTOR-TRANSISTOR	1	
Q707	2SB1073	TRANSISTOR	1	
QR302	MRN1102	TRANSISTOR-RESISTOR	1	
QR303	XP1211	TRANSISTOR-RESISTOR	1	
R301	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R302	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R303	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R304	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R307	ERJ2GEJ121	M. RESISTOR CH 1/16W 120	1	
R308, 09	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R310	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R311	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R312	ERJ2GEJ392	M. RESISTOR CH 1/16W 3. 9K	1	
R313	ERJ2GEJ182	M. RESISTOR CH 1/16W 1. 8K	1	
R314, 15	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	2	
R316, 17	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	2	
R318	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R319	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R320	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R321	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R322, 23	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	2	
R324, 25	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R326	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R327-29	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	3	
R330	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R331	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R332	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	1	
R334, 35	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R338	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R339, 40	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	2	
R341	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R343	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R346	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R367	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R387, 88	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	2	
R389, 90	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	2	
R391	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R413	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R471	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R701,02	ERJ3GEYJ3R3	M.RESISTOR CH 1/16W 3.3	2	
R703	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R704	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	1	
R705-07	ERJ2GEJ272	M.RESISTOR CH 1/16W 2.7K	3	
R708,09	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	2	
R710	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R711	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R712	ERJ3RED124	M.RESISTOR CH 1/16W 120K	1	
R713,14	ERJ2RHD472	M.RESISTOR CH 1/16W 4.7K	2	
R715	ERJ3RED124	M.RESISTOR CH 1/16W 120K	1	
R716	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R717,18	ERJ6RBB472	M.RESISTOR CH 1/10W 4.7K	2	
R719,20	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	2	
R721	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	1	
R722	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R723	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R724	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R725	ERJ2GEJ152	M.RESISTOR CH 1/16W 1.5K	1	
R726	ERJ2GEJ184	M.RESISTOR CH 1/16W 180K	1	
R727	ERJ2GEJ821	M.RESISTOR CH 1/16W 820	1	
R728	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1	
R729	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	1	
R730	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	1	
R731	ERJ2GEJ274	M.RESISTOR CH 1/16W 270K	1	
R732	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
R733	ERJ2GEJ274	M.RESISTOR CH 1/16W 270K	1	
R734	ERJ2GEJ394	M.RESISTOR CH 1/16W 390K	1	
R735,36	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	2	
R737	ERJ2GEJ684	M.RESISTOR CH 1/16W 680K	1	
R738	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R739	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	1	
R740	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R741	ERJ2GEJ224	M.RESISTOR CH 1/16W 220K	1	
R742	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R743,44	ERJ2RHD153	M.RESISTOR CH 1/16W 15K	2	
R746	ERJ6RQF1R8	M.RESISTOR CH 1/10W 1.8	1	
R747	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R748	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R750	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R751	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	1	
R752	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R753	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R754	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R755	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R756,57	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	2	
R758	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R759	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R760	ERJ2GEJ393	M.RESISTOR CH 1/16W 39K	1	
R762,63	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	2	
R764,65	ERJ2RHD122	M.RESISTOR CH 1/16W 1.2K	2	
R766	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	1	
R767	ERJ2RHD122	M.RESISTOR CH 1/16W 1.2K	1	
R768	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R769	ERJ2GEJ474	M.RESISTOR CH 1/16W 470K	1	
R775	ERJ2GEJ184	M.RESISTOR CH 1/16W 180K	1	
R777	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
RA301-05	EXB24V473J	RESISTOR-RESISTOR	5	
RA307	EXB24V473J	RESISTOR-RESISTOR	1	
RA310	EXB24V332J	RESISTOR-RESISTOR	1	
RA311,12	EXB24V103J	RESISTOR-RESISTOR	2	
RA314,15	EXB24V104J	RESISTOR-RESISTOR	2	
RA316	EXB24V152J	RESISTOR-RESISTOR	1	
RA317	EXB24V681J	RESISTOR-RESISTOR	1	
RA319-21	EXB24V102J	RESISTOR-RESISTOR	3	
RA323	EXB24V102J	RESISTOR-RESISTOR	1	
RA324	EXB24V473J	RESISTOR-RESISTOR	1	
RA325	EXB24V101J	RESISTOR-RESISTOR	1	
RA333-39	EXB24V101J	RESISTOR-RESISTOR	7	
TH701	VRT0147J683T	THERMISTOR	1	
TH702	VRT0147J334T	THERMISTOR	1	
TH703	VRT0147J103T	THERMISTOR	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
X301	VSX0894	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
	VGQ4776	BARRIER	1	
■	VEP20737A	CAMERA OPERATION C.B.A.		(RTL)
SW6501	VSS0348	SWITCH	1	
SW6502-04	EVQQW101M	SWITCH	3	
SW6505	VSR0223	SWITCH	1	
■	VEP28240D	E.V.F. (A) C.B.A.		(RTL)
BL881	VLL0203	FLUORESCENT LAMP	1	
Q881	2SK1299-3S	TRANSISTOR	1	
R881	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
T881	ETJ09K31AM	TRANSFORMER	1	
		MISCELLANEOUS		
	VWJ1174	FLAT CARD CABLE	1	
■	VEP28244B	E.V.F. (B) C.B.A.		(RTL)
C801	ECUM1A335KBP	C.CAPACITOR CH 10V 33U	1	
C802	ECGC1BB150	E.CAPACITOR CH 12.5V 15U	1	
C827	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C829	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C830	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C832	ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C833	ECST1CY225Z	T.CAPACITOR CH 16V 2.2U	1	
C834-37	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	4	
C838,39	ECST0JY106Z	T.CAPACITOR CH 6.3V 10U	2	
C865,66	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	2	
D801	MA338	DIODE	1	
D803	1SS355	DIODE	1	
FP801	VJS3319B018	CONNECTOR (FEMALE) 18P	1	
FP802	VJS3319B016	CONNECTOR (FEMALE) 16P	1	
IC802	ET2070F0C	IC	1	
IC805	TA75S558F	IC	1	
L801	VLQ0426J6R8	COIL 6.8UH	1	
L803-05	VLQ0807K100	COIL 10UH	3	
L881	VLQ0779K100	COIL 10UH	1	
R802	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R805	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R807,08	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	2	
R832	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R834	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R835	ERJ3GEYG472	M.RESISTOR CH 1/16W 4.7K	1	
R836	ERJ3GEYG471	M.RESISTOR CH 1/16W 470	1	
R841	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R849	ERJ3GEYG471	M.RESISTOR CH 1/16W 470	1	
R850	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R851	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R852	ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R878,79	ERJ3RBD183	M.RESISTOR CH 1/16W 18K	2	
R880	ERJ3RBD332	M.RESISTOR CH 1/16W 3.3K	1	
■	VEP06C28A	HALL SENSOR C.B.A.		(RTL)
		MISCELLANEOUS		
	DN8797MS	HALL IC	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP26195B	MONITOR C.B.A.		(RTL)
C901	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C902	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C903	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C904	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C905	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C906	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C909	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C910	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C911	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C912	ECST1VX225Z	T.CAPACITOR CH 35V 2.2U	1	
C922	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
C923	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C924	ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C925	ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C926	ECUX1H100CCV	C.CAPACITOR CH 50V 10P	1	
C927	ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C928	ECST0JY335Z	T.CAPACITOR CH 6.3V 3.3U	1	
C929	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C933	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C934	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C935	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C938	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
D901	MA338	DIODE	1	
FP901	VJS3320B024	CONNECTOR (FEMALE) 24P	1	
FP903	VJS3319B016	CONNECTOR (FEMALE) 16P	1	
FP904	VJS3320B016	CONNECTOR (FEMALE) 16P	1	
FP905	VJS3319B006	CONNECTOR (FEMALE) 6P	1	
IC902	CXD2411AR	IC	1	
IC903	NJM2904V	IC	1	
IC904	LZ9GB244	IC	1	
IC905	TC4W66FU	IC	1	
IC906	TC7ST04FU	IC	1	
IC907	TC7S14FU	IC	1	
IC908	TC7ST08FU	IC	1	
IC909	NJM78L12UA	IC	1	
L901	VLQ0807K100	COIL 10UH	1	
L902	VLQ0426J4R7	COIL 4.7UH	1	
L903	VLQ0807K100	COIL 10UH	1	
L904	VLQ0319M3R3	COIL	1	
L905	VLQ0807K100	COIL 10UH	1	
L907, 08	VLQ0807K100	COIL 10UH	2	
P901	VJP3972D004	CONNECTOR (MALE) 4P	1	
Q901	XP4601	TRANSISTOR-TRANSISTOR	1	
Q903	XP1501	TRANSISTOR-RESISTOR	1	
Q904	XP4601	TRANSISTOR-TRANSISTOR	1	
Q905	2SD2216	TRANSISTOR	1	
Q906	XP1501	TRANSISTOR-RESISTOR	1	
QR901	XP4312	TRANSISTOR-RESISTOR	1	
QR905	MRN1104	TRANSISTOR-RESISTOR	1	
QR906	XP4213	TRANSISTOR-RESISTOR	1	
R901, 02	ERJ3RBD153	M.RESISTOR CH 1/16W 15K	2	
R903	ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R905	ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R906, 07	ERJ3GEYG472	M.RESISTOR CH 1/16W 4.7K	2	
R908, 09	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	2	
R910	ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R911	ERJ3RBD153	M.RESISTOR CH 1/16W 15K	1	
R912	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R913	ERJ3GEYG472	M.RESISTOR CH 1/16W 4.7K	1	
R914	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R915-17	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	3	
R921	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R922	ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R924	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R925-27	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R928	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R929, 30	ERJ3GEYG332	M.RESISTOR CH 1/16W 3.3K	2	
R931	ERJ3RBD333	M.RESISTOR CH 1/16W 33K	1	
R932	ERJ3RBD473	M.RESISTOR CH 1/16W 47K	1	
R933	ERJ3RBD333	M.RESISTOR CH 1/16W 33K	1	
R934, 35	ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	2	
R944-46	ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	3	
R953	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R954-57	ERJ3GEYG472	M.RESISTOR CH 1/16W 4.7K	4	
R958, 59	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
		MISCELLANEOUS		
	VGQ4630	LCD BARRIER	1	
■	VEP00Y65A	LCD/IF C.B.A.		(RTL)
C3501	ECST0JD107Z	T.CAPACITOR CH 6.3V 100U	1	
C3503	ECST0JD107Z	T.CAPACITOR CH 6.3V 100U	1	
FP3501	VJS3320B018	CONNECTOR (FEMALE) 18P	1	
FP3502, 03	VJS3320B016	CONNECTOR (FEMALE) 16P	2	
LB3501-04	VLP0157	COIL	4	
LB3505-07	VLP0155	COIL	3	
LB3508, 09	VLF1143A102	COIL 1000UH	2	
LB3510-14	VLP0157	COIL	5	
PS3501	VJS3636	SOCKET 36P	1	
PS3502	VJS3989C070	CONNECTOR (FEMALE) 70P	1	
R3501, 02	ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	2	
■	VEP04684A	FRONT C.B.A.		(RTL)
C4903	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C4905	ECST0JX226Z	T.CAPACITOR CH 6.3V 22U	1	
C4908	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C4910, 11	ECST0JX226Z	T.CAPACITOR CH 6.3V 22U	2	
C4914	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C4915	ECUX1C473KBV	C.CAPACITOR CH 16V 0.047U	1	
C4916	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C4917	ECUX1C473KBV	C.CAPACITOR CH 16V 0.047U	1	
C6401	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C6402	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
D6801	CL150UR	DIODE	1	
FL4901	VLF1339B306	FILTER	1	
FL4902	VLF1341B306	FILTER	1	
FP4801	VJS3452A013	CONNECTOR (FEMALE) 13P	1	
FP4901	VJS3319B006	CONNECTOR (FEMALE) 6P	1	
FP4902	VJS3319B005	CONNECTOR (FEMALE) 5P	1	
IR6401	VEK8283	IR RECEIVER UNIT	1	
J4901	VJJ0414	MIC JACK	1	
Q4901	2SC3929	TRANSISTOR	1	
Q4902	2SB1218A	TRANSISTOR	1	
Q4903	2SC3929	TRANSISTOR	1	
Q4904	2SB1218A	TRANSISTOR	1	
Q4905	2SD1819A	TRANSISTOR	1	
QR4903, 04	UN5212	TRANSISTOR-RESISTOR	2	
R4902	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R4905	ERJ3GEYG471	M.RESISTOR CH 1/16W 470	1	
R4906	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4907	ERJ6GEYG154	M.RESISTOR CH 1/10W 150K	1	
R4908	ERJ6GEYG563	M.RESISTOR CH 1/10W 56K	1	
R4909	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R4910	ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4911	ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R4912	ERJ3GEYG471	M.RESISTOR CH 1/16W 470	1	
R4913	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4914	ERJ6GEYG154	M.RESISTOR CH 1/10W 150K	1	
R4915	ERJ6GEYG563	M.RESISTOR CH 1/10W 56K	1	
R4916	ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R4917	ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4918	ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R4919	ERJ3GEYG472	M.RESISTOR CH 1/16W 4.7K	1	
R4924	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4925	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4926	ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R4928	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4929	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4930	ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R6803	ERJ6GEYG181	M.RESISTOR CH 1/10W 180	1	
		MISCELLANEOUS		
	VSC4666	SHIELD COVER A	1	
	VSC4667	SHIELD COVER B	1	
■	VEP22270A	AWT SENSOR C.B.A.		(RTL)
C401	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C402	ECST0JY475Z	T.CAPACITOR CH 6.3V 4.7U	1	
C403	ECST0JY106Z	T.CAPACITOR CH 6.3V 10U	1	
FP401	VJS3452A008	CONNECTOR (FEMALE) 8P	1	
IC401	M52944FP	IC	1	
L401	VLQ0807K100	COIL 10UH	1	
QR401	UN2212	TRANSISTOR-RESISTOR	1	
R401	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
■	VEP06C24A	TOP OPERATION C.B.A.		(RTL)
FP6801	VJS3320B007	CONNECTOR (FEMALE) 7P	1	
S6801-04	VSP1021	SWITCH	4	
S6806	VSP1021	SWITCH	1	
■	VEP06C37A	REAR OPERATION C.B.A.		(RTL)
B6701	VL2020/1HF	LITHIUM BATTERY	1	
D6701	GL150YG-GD	DIODE	1	
D6702	GL150UR	DIODE	1	
FP6701	VJS3320B016	CONNECTOR (FEMALE) 16P	1	
FP6702	VJS3320B005	CONNECTOR (FEMALE) 5P	1	
R6701	ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
S6701	ESE103119	SWITCH	1	
S6702	VMG0763	RUBBER SWITCH	1	
S6703	EVQPA501K	PUSH SWITCH	1	
S6704	ESD165236	SWITCH	1	
■	VEP22278A	CAMERA SUB C.B.A.		(RTL)
C101	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
C102	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C103	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
C104	ECST0JX476Z	T.CAPACITOR CH 6.3V 47U	1	
C107	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C108, 09	ECUX1A105ZFV	C.CAPACITOR CH 10V 1U	2	
C111	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C112, 13	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C115	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C117	ECST0JX476Z	T.CAPACITOR CH 6.3V 47U	1	
C119	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C124	ECUX1H270JCQ	C.CAPACITOR CH 50V 27P	1	
C125, 26	ECUX1H150JCQ	C.CAPACITOR CH 50V 15P	2	
C127, 28	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	2	
C129	ECST1DY475Z	T.CAPACITOR CH 20V 4.7U	1	
C130	ECST1VX155Z	T.CAPACITOR CH 35V 1.5U	1	
C131	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C132	ECST1DY475Z	T.CAPACITOR CH 20V 4.7U	1	
C133	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
C134-36	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	3	
C154	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	1	
C155	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
C163	ECUX1C153KBQ	C.CAPACITOR CH 16V 0.015U	1	
C500	ECST0JX476Z	T.CAPACITOR CH 6.3V 47U	1	
C501	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
C504	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C506	ECUX1H150JCQ	C.CAPACITOR CH 50V 15P	1	
C507	ECUX1H180JCQ	C.CAPACITOR CH 50V 18P	1	
C508, 09	ECUX1H150JCQ	C.CAPACITOR CH 50V 15P	2	
C510	ECUX1H390JCQ	C.CAPACITOR CH 50V 39P	1	
C511	ECUX1H180JCQ	C.CAPACITOR CH 50V 18P	1	
C512	ECUX1H390JCQ	C.CAPACITOR CH 50V 39P	1	
C513	ECUX1H180JCQ	C.CAPACITOR CH 50V 18P	1	
C514	ECUX1H390JCQ	C.CAPACITOR CH 50V 39P	1	
C515	EEJK0JS106	E.CAPACITOR 6.3V 10U	1	
C516-20	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	5	
C521	ECST0GY226Z	T.CAPACITOR CH 4V 22U	1	
C522	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
C523	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	1	
C524	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C525-27	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	3	
C528	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C529	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	1	
C530-41	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	12	
C542-44	EEJK0JS106	E.CAPACITOR 6.3V 10U	3	
C545	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
C546	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	1	
C547	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	1	
C548, 49	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	2	
C550-58	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	9	
C559	ECST0JX476Z	T.CAPACITOR CH 6.3V 47U	1	
C560	ECST0JY475Z	T.CAPACITOR CH 6.3V 4.7U	1	
C561, 62	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	2	
C563	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
C564	ECUM1A225KBM	C.CAPACITOR CH 10V 2.2U	1	
C565	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
C566	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
C567	ECUM1A225KBM	C.CAPACITOR CH 10V 2.2U	1	
C568	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
C569	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
C570	ECUM1A225KBM	C.CAPACITOR CH 10V 2.2U	1	
C571	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C572-74	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	3	
C575, 76	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	2	
C577	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
C578	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
C579	ECUX1A105ZFV	C.CAPACITOR CH 10V 1U	1	
C580	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
C581	ECST1AY106Z	T.CAPACITOR CH 10V 10U	1	
C582, 83	ECUX1H150JCQ	C.CAPACITOR CH 50V 15P	2	
C585	ECST0JY156Z	T.CAPACITOR CH 6.3V 15U	1	
C586	ECUX1A105ZFV	C.CAPACITOR CH 10V 1U	1	
C587	ECUX1H150JCQ	C.CAPACITOR CH 50V 15P	1	
C589	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	1	
D103	MA728	DIODE	1	
D104	1SS355	DIODE	1	
D105	MA728	DIODE	1	
D110	MA728	DIODE	1	
D501	1SS355	DIODE	1	
D502	MA741WK	DIODE	1	
D503, 04	1SS355	DIODE	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
FL501-03	VLF1173	FILTER	3	
FL504-06	VLF1374	FILTER	3	
FP501	VJS3971D051	CONNECTOR (FEMALE) 51P	1	
FP502	VJS3320B005	CONNECTOR (FEMALE) 5P	1	
IC101,02	TC7SH08FU	IC	2	
IC106	MN5236	IC	1	
IC107,08	MB87882PFV	IC	2	
IC109	T74VHC04FS	IC	1	
IC110	TC7SH04FU	IC	1	
IC111	TC7SH08FU	IC	1	
IC112	TC7SH04FU	IC	1	
IC501	NJU4051BV	IC	1	
IC502,03	AN2018S	IC	2	
IC504	UPC2391AGB	IC	1	
IC505	TA75W01FU	IC	1	
IC506	AN2018S	IC	1	
IC507	MB88344PFV	IC	1	
IC508	RN5RG46AATRS	IC	1	
IC509	NJM2902V	IC	1	
IC510	AK6480AF	IC	1	
L101,02	VLQ0807K100	COIL 10UH	2	
L106-08	VLQ0807K100	COIL 10UH	3	
L114	VLQ0780K330	COIL 33UH	1	
L501	VLQ0807K100	COIL 10UH	1	
L502-04	VLQ0780K330	COIL 33UH	3	
L505,06	VLQ0807K100	COIL 10UH	2	
L507	VLQ0780M6R8	COIL 6.8UH	1	
L512	VLQ0807K100	COIL 10UH	1	
L513	VLQ0780M6R8	COIL 6.8UH	1	
LB101	VLP0154	COIL	1	
LB102,03	VLF1144A102	COIL 1000UH	2	
PP101	VJP3358C026	CONNECTOR (MALE) 26P	1	
Q501-03	2SB1462-R	TRANSISTOR	3	
Q504	2SB1073	TRANSISTOR	1	
Q505	2SD2216	TRANSISTOR	1	
Q506	2SB1462-R	TRANSISTOR	1	
Q507-09	2SD2216	TRANSISTOR	3	
Q510	2SB970X	TRANSISTOR	1	
QR501-06	MRN1103	TRANSISTOR-RESISTOR	6	
R101	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R102	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1	
R103,04	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	2	
R105	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R111	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R112	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R113	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R114,15	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	2	
R116	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	
R117,18	ERJ2GEJ271	M.RESISTOR CH 1/16W 270	2	
R127	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R131	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R135	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R138,39	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	2	
R142	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R146	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R147	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	1	
R148-53	ERJ2GEJ330	M.RESISTOR CH 2W 33	6	
R501,02	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	2	
R503-07	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	5	
R508	ERJ2GEJ272	M.RESISTOR CH 1/16W 2.7K	1	
R509	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	
R510	ERJ2GEJ272	M.RESISTOR CH 1/16W 2.7K	1	
R511	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	
R512	ERJ2GEJ272	M.RESISTOR CH 1/16W 2.7K	1	
R513	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R514	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R515	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R516	ERJ2RHD153	M.RESISTOR CH 1/16W 15K	1	
R517	ERJ2RHD102	M.RESISTOR CH 1/16W 1K	1	
R518	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R519	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R520,21	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	2	
R522	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R523	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R524	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
R525	ERJ2RHD513	M.RESISTOR CH 1/16W 51K	1	
R526	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R527	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	
R528	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R529	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	
R530	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R531	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	
R532	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
R533,34	ERJ2RHD513	M.RESISTOR CH 1/16W 51K	2	
R535	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
R536	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R537,38	ERJ2GEJ152	M.RESISTOR CH 1/16W 1.5K	2	
R539	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	1	
R540	ERJ2RHD133	M.RESISTOR CH 1/16W 13K	1	
R541	ERJ2RHD183	M.RESISTOR CH 1/16W 18K	1	
R542	ERJ2RHD133	M.RESISTOR CH 1/16W 13K	1	
R543-45	ERJ2GEJ271	M.RESISTOR CH 1/16W 270	3	
R546	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R547	ERJ2RHD102	M.RESISTOR CH 1/16W 1K	1	
R548	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1	
R549	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	1	
R550	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R551	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R552	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R553	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	1	
R554	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	1	
R555	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R556	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R557,58	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	2	
R559	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R560-62	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	3	
R563-65	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	3	
R566	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R567	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R568	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R569	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R570	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R571	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R572	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R573	ERJ2RHD163	M.RESISTOR CH 1/16W 16K	1	
R574	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1	
R575	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R576	ERJ2GEJ822	M.RESISTOR CH 1/16W 8.2K	1	
R577	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R578	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R579	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R580	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R581	ERJ2GEJ100	M.RESISTOR CH 1/16W 10	1	
R582	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R585	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	1	
R586,87	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	2	
R588	ERJ2GEJ821	M.RESISTOR CH 1/16W 820	1	
R589-91	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	3	
R592,93	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	2	
X101	VCR0501	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
	VGQ4731	BARRIER	1	
■	VEP05352A	HEAD AMP C.B.A.		(RTL)
C5001,02	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	2	
C5004	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C5007	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	
C5010	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C5013	ECUX1E152KBQ	C. CAPACITOR CH 25V 1500P	1	
C5014	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C5015	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5016	ECUX1H330JCQ	C. CAPACITOR CH 50V 33P	1	
C5017	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5018	ECUX1H220JCQ	C. CAPACITOR CH 50V 22P	1	
C5019	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5020, 21	EEJK0JS106	E. CAPACITOR 6.3V 10U	2	
C5023, 24	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	2	
C5025	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C5026	ECUX1E152KBQ	C. CAPACITOR CH 25V 1500P	1	
C5027	ECUX1H330JCQ	C. CAPACITOR CH 50V 33P	1	
C5028	ECUX1E122KBQ	C. CAPACITOR CH 25V 1200P	1	
C5029	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C5030	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C5031	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5032	ECUX1H470JCQ	C. CAPACITOR CH 50V 47P	1	
C5033	ECUX1E681KBQ	C. CAPACITOR CH 25V 680P	1	
C5034	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5035-37	EEJK0JS106	E. CAPACITOR 6.3V 10U	3	
C5038-40	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
FP5001	VJS3320B008	CONNECTOR (FEMALE) 8P	1	
IC5001	AN3731FHQ	IC	1	
L5002, 03	VLQ0808J220	COIL 22UH	2	
L5005	VLQ0807M4R7	COIL 4.7UH	1	
L5007	VLQ0807M4R7	COIL 4.7UH	1	
Q5002, 03	2SC3937	TRANSISTOR	2	
Q5005, 06	2SD1819A	TRANSISTOR	2	
R5002	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R5003	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R5004	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R5005	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R5010	ERJ2GEJ680	M. RESISTOR CH 1/16W 68	1	
R5012	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R5013	ERJ3GEYJ123	M. RESISTOR CH 1/16W 12K	1	
R5014, 15	ERJ2GEJ271	M. RESISTOR CH 1/16W 270	2	
R5016, 17	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	2	
R5018	ERJ2GEJ680	M. RESISTOR CH 1/16W 68	1	
R5019	ERJ3GEYJ123	M. RESISTOR CH 1/16W 12K	1	
R5020	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R5021	ERJ3GEYJ100	M. RESISTOR CH 1/16W 10	1	
R5024	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R5025	ERJ2GEJ271	M. RESISTOR CH 1/16W 270	1	
R5026	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R5028	ERJ2GEJ152	M. RESISTOR CH 1/16W 1.5K	1	
R5029	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
		MISCELLANEOUS		
	VSC4639	SHIELD COVER	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks

Order no. VMD9802012S8

Service Manual

Supplement

Video Product

Effective from : First Production

Model No:NV-DS1EG/B/EN
NV-DS5EG/B/EN
NV-DX100EG/B/EN/ENA

Subject : Correction of Service Manual

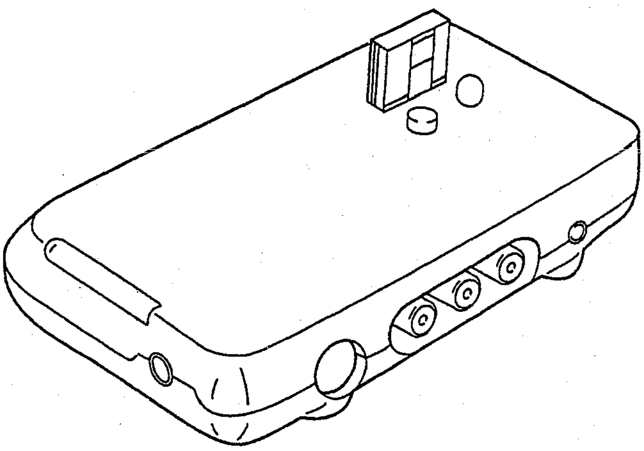
Please use this service manual together with the service manual for Order No.VMD9708014C8,VMD9710040C8.
Model No. NV-DS1EG/B/EN,NV-DS5EG/B/EN,NV-DX100EG/B/EN/ENA

Interchangeability Code														
See the I/C column on the following Part Number list.														
	Parts	Production		Parts	Production		Parts	Production		Parts	Production	E	Addition
A	Original	Early	B	Original	Early	C	Original	Early	D	Original	Early	F	Deletion
	New	Late		New	Late		New	Late		New	Late	G	Other

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Description	I/C	Remarks
	—	VSK0499	OUTPUT TERMINAL BOX	G	

VSK0499 is standard accessories for our Digital Video Camcorder.
We will supply this output terminal box throughout service route from now on.



⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1998 Matsushita Electric Industrial Co., LTd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

Order no. VMD9802016S8

Service Manual

Supplement

Video Product

Effective from : Running Change

Model No:NV-DX100EG/B/EN/ENA

Subject : Improvement of Performance

Please use this service manual together with the service manual for Order No.VMD9710040C8.
Model No. NV-DX100EG/B/EN/ENA

Interchangeability Code					See the I/C column on the following Part Number list.								
	Parts	Production		Parts	Production		Parts	Production		Parts	Production	E	Addition
A	Original	Early	B	Original	Early	C	Original	Early	D	Original	Early	F	Deletion
	New	Late		New	Late		New	Late		New	Late	G	Other

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Description	I/C	Remarks
IC305	MN1021617AA	MN1021617EB	IC	A	

⚠ **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1998 Matsushita Electric Industrial Co., LTd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

Order No. VMD9803022S8

Service Manual

Supplement

Video Product

Effective from : Running Change

Model No.
NV-DX1 E/EN
NV-DS1 EG/B/EN
NV-DS5 EG/B/EN
NV-DX100 EG/B/EN/ENA

Subject : Correction of RF Adjustment

Please use this service manual together with the Service Manual for Order No. **VMD9605M129, VMD9706005A8, Model. NV-DX1 E/EN, DJ Mechanism Chassis** and **Tatsujin Software** for NV-DX1E/EN, NV-DS1 EG/B/EN, NV-DS5 EG/B/EN and NV-DX100 EG/B/EN/ENA

Please correct following Adjustment Procedures.

<NV-DX1 E/EN, VMD9605M129 : Page 5>
<DJ Mechanism, VMD9706005A8 : Page 13>

RF Adjustment

TP : VTP9 / 22 /23 / 24 **(Only NV-DX1)**
Mode : PLAY
Tape : **Self Recording**
M.Eq : Oscilloscope and B.E.R. Counter **(Only NV-DX1)**
Spec. : B.E.R. Counter number less than 200 in SP Mode (Full assembled condition)

<Preparation : Only NV-DX1>

Supply DC Power (6V) to B.E.R. (Bit Error Rate) Counter. Connect B.E.R. Counter (VFK1234) with B.E.R. Counter Cable (VFK1263) to following TP on Sub I/F Board.

Sub I/F Board		B.E.R. Counter
Pin 9 [D.GND]	➡	Black Clip
Pin 22 [CLK18]	➡	Blue Clip
Pin 23 [SBE]	➡	White Clip
Pin 24 [HID]	➡	Red Clip

<Adjustment>

1 Record any signal in SP mode on the tape within 30 times used. Then play back the just recorded portion and confirm Bit Error Rate counter becomes less than 200 for each L and R head (Viterbi OFF:F4). If not, adjust following points.

[DL] [COMP LEV] [ALPHA]
[ERR DL] [CLK PHASE]

<Except NV-DX1>

2 Record any signal in LP mode on the tape within 30 times used. Then play back the just recorded portion.

3 Turn ON the Viterbi by pressing the F3 key on the PC. (F4 : Viterbi OFF)

4 Then confirm Bit Error Rate counter becomes less than 100 for each L and R head. If not, repeat 5 point adjustments in SP Mode.

Tatsujin Software is upgraded from the following Version.

NV-DX1 : Ver. 1.2A
NV-DS1 : Ver. 1.51
NV-DS5 : Ver. 1.51
NV-DX100 : Ver. 1.2

⚠ WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1998 Matsushita Electric Industrial Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.

Order NO. VMD9806033S8

Service Manual

Supplement

Video Product

Effective from : First Production

Model No:NV-DX100EG/B
EN/ENA

Subject : Correction of Servive Manual

Please use this service manual together with the service manual for Order No.VMD9710040C8.
Model No. NV-DX100EG/B/EN/ENA

Please correct the Service Manual for NV-DX100 series as follows.
(Page 1 & 2 :Service Information)

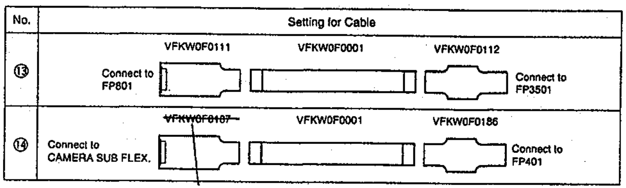
Service Information

1.Service Extension Cables

No	Parts No.	PIN	Parts Name	Connection	Q'TY	Remaks
1	VFK1389	26	Flat Cable	CCD - CAM Sub PP101	1	
2(1)	VFK1311	80	Flat Cable	CAM Main PP301 - VTR Main PS3002	1	
2(2)	VFK1311	80	Flat Cable	Power PP1001 - VTR Main PS1001	1	
3	VFK1387	30	Flat Cable	CAM Main PP302 - VTR Main PS3001	1	
4	VFK1388	12	Flat Cable	CAM Main FP305 - CAM-Operation	1	
5	VFK1367	50	Flat Cable	VTR Main PP2001 - Drive PS2001	1	
6	VFK1176	13	Flat Cable	VTR Main FP4001 - Front FP4801	1	
7	VFK1286	16	Flat Cable	VTR Main FP6002 - REAR-OP FP6701	1	
8	VFK1173	14	Flat Cable	Power FP1001 - Battery	1	
9	VFK1282	22	Flat Cable	CAM Main FP701 - Lens Drive	1	
10	VFK1284	24	Flat Cable	VTR Main FP3201 - Mecha H-Rec Amp	1	
11	VFK1365	70	Flat Cable	VTR Main PP3002 - LCD I/F PS3502	1	
12(1)	VFK1175	16	Flat Cable	LCD I/F FP3503 - Monitor(A) FP904	1	
12(2)	VFK1175	16	Flat Cable	LCD FP3502 I/F -Monitor (B) FP903	1	
13	**VFKW0F0112**	18	**Attachement Cable**	LCD I/F FP3501 - EVF (B) FP801	1	
	VFKW0F0001	28	**Common Cable**		1	
	VFKW0F0111	18	**Attachement Cable**		1	
14	**VFKW0F0186**	8	**Attachement Cable**	AWT Sensor FP401 - CAM Sub Flex	1	
	VFKW0F0001	28	**Common Cable**		1	
	~~**VFKW0F0187**~~	8	**Attachement Cable**		1	
15	VFK1173	14	Flat Cable	VTR Main FP6001 - TOP OP Flex	1	

VFKW0F0185

Setting for Cable



VFKW0F0185

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1998 Matsushita Electric Industrial Co., LTd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

Order NO. VMD9807041S8

Service Manual

Supplement

Video Product

Effective from : Running Change

Model No:NV-DX100EN/ENA

Subject : Improvement of Performance

Please use this service manual together with the service manual for Order No.VMD971040C8

Interchangeability Code See the I/C column on the following Part Number list.

	Parts	Production		Parts	Production		Parts	Production		Parts	Production		
A	Original	Early	B	Original	Early	C	Original	Early	D	Original	Early	E	Addition
	New	Late		New	Late		New	Late		New	Late	F	Deletion
												G	Other

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Description	I/C	Remarks
	———————	VFK1451	CLEANING TAPE	E	EN/ENA ONLY

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1998 Matsushita Electric Industrial Co., LTd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

Order NO. VMD9807041S8

Service Manual

Supplement

Video Product

Effective from : Running Change

Model No:NV-DX100EN/ENA

Subject : Improvement of Performance

Please use this service manual together with the service manual for Order No.VMD971040C8

Interchangeability Code							See the I/C column on the following Part Number list.						
	Parts	Production		Parts	Production		Parts	Production		Parts	Production	E	Addition
A	Original	Early	B	Original	Early	C	Original	Early	D	Original	Early	F	Deletion
	New	Late		New	Late		New	Late		New	Late	G	Other

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Description	I/C	Remarks
	————	VFK1451	CLEANING TAPE	E	EN/ENA ONLY

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1998 Matsushita Electric Industrial Co., LTd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

INTERNAL REFERENCE CODES

NOTE: This chart is only for internal reference.
Do not order any parts according to these codes.

P.C.B.	FILM CODE
TOP OPERATION	HOKU01-06C24
FRONT	HOKU00-04684
CAMERA MAIN	HOKU01-23443
AWT SENSOR	HOKU00-22270
CAMERA SUB	HOKU00-22278
MF RING	HOKU00-20738
CAMERA OPERATION	HOKU00-20737
VTR MAIN	HOKU00-03E52
POWER	HOKU02-01801
REAR OPERATION	HOKU00-06C37
HEAD AMP	HOKU01-05352
DRIVE	HOKU00-02561
LCD I/F	HOKU03-00Y65
MONITOR	HOKU00-26195
HALL SENSOR	HOKU00-06C28
E.V.F.(A)	HOKU00-28240
E.V.F.(B)	HOKU00-28244

ORDER NO. VMD9706005A8

Service Manual

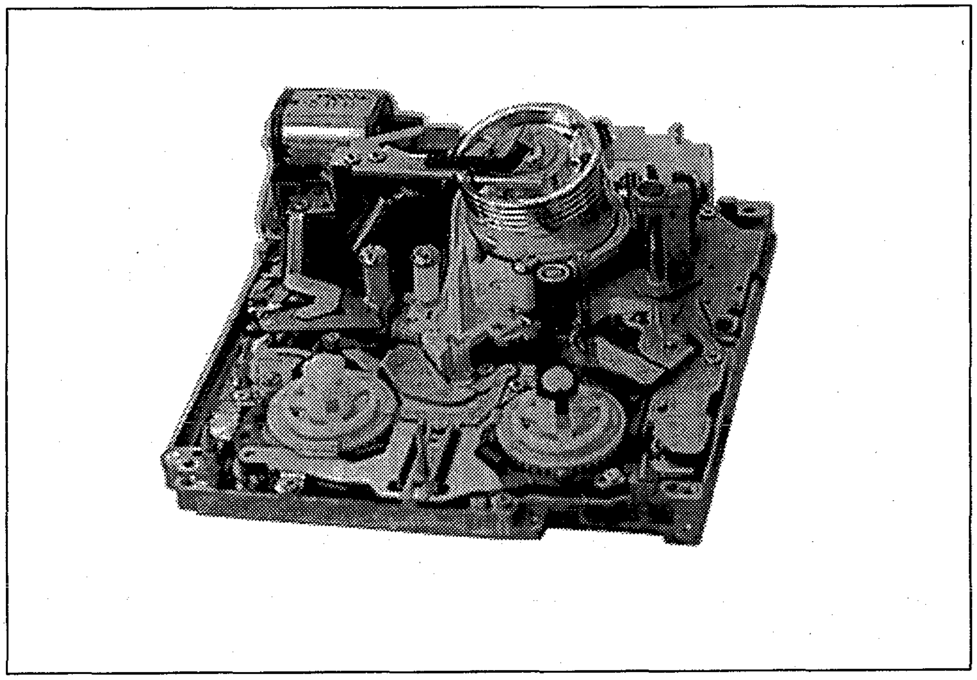
Disassembly/Assembly Procedures
Mechanical Adjustment Procedures
Exploded Views/Parts List

V19045

Panasonic Mini DV PAL

Digital Video Camera

DJ MECHANISM CHASSIS



INTRODUCTION
The DJ-Mechanism chassis are built in several Panasonic Digital Video Camera from NV-DX1 series in 1996.

⚠ WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1997 Matsushita Electric Industrial Co., Ltd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

CONTENTS

1. Mechanical Parts Location 2
2. Disassembly/Assembly Procedures of Mechanism 2
    1. Garage Unit (Manual Eject) 3
    2. Earth Brush (Note of installation) 3
    3. Loading Motor Unit 3
    4. Head Amp C.B.A. 3
    5. Cylinder Unit 3
    6. Cleaning Arm Unit (Note of installation) 3
    7. Pinch Arm & T3 Arm Unit (Note of installation) 3
    8. Tension Arm Unit (Note of installation) 3
    9. Reel Tables & Brakes (Note of installation) 3
    10. Play & FF/REW Gear 5
    11. T2 Arm Unit (Note of installation) 5
    12. S1 & T1 Base (Note of installation) 5
    13. S1 Arm (Note of installation) 5
    14. Radon Plate, Radon Arm & T1 Arm (Note of installation) 5
    15. Pad Arm (Note of installation) 5
    16. Eject Arm 5
    17. Mode Gear & Main Cam Gear (Note of installation) 5
    18. T3 Rod & Brake Rod (Note of installation) 7
    19. Capstan Belt (Note of installation) 7
    20. Capstan Motor Unit 7
3. Mechanical Adjustment Procedure 8
    - 3-1. Test Equipment and Tools 8
    - 3-2. Mechanism Adjustment 9
        1. Tension Post & T3 Post Height Adjustment 9
        2. Tension Post Position Adjustment 10
        3. Supply & Take-up Reel Tables Height Adjustment 10
        4. Cap. Tilt Adjustment 10
        5. Confirmation 10
            - 5-1. Confirmation of tape travel 10
            - 5-2. Confirmation of the Envelope Output 12
        6. Final Adjustment with BER Counter and "Tatsujin Kit" 13
4. Exploded Views & Parts List 15
    - ❶ VCR Mechanism 1 Section 15
    - ❷ VCR Mechanism 2 Section 16

1. Mechanical Parts Location

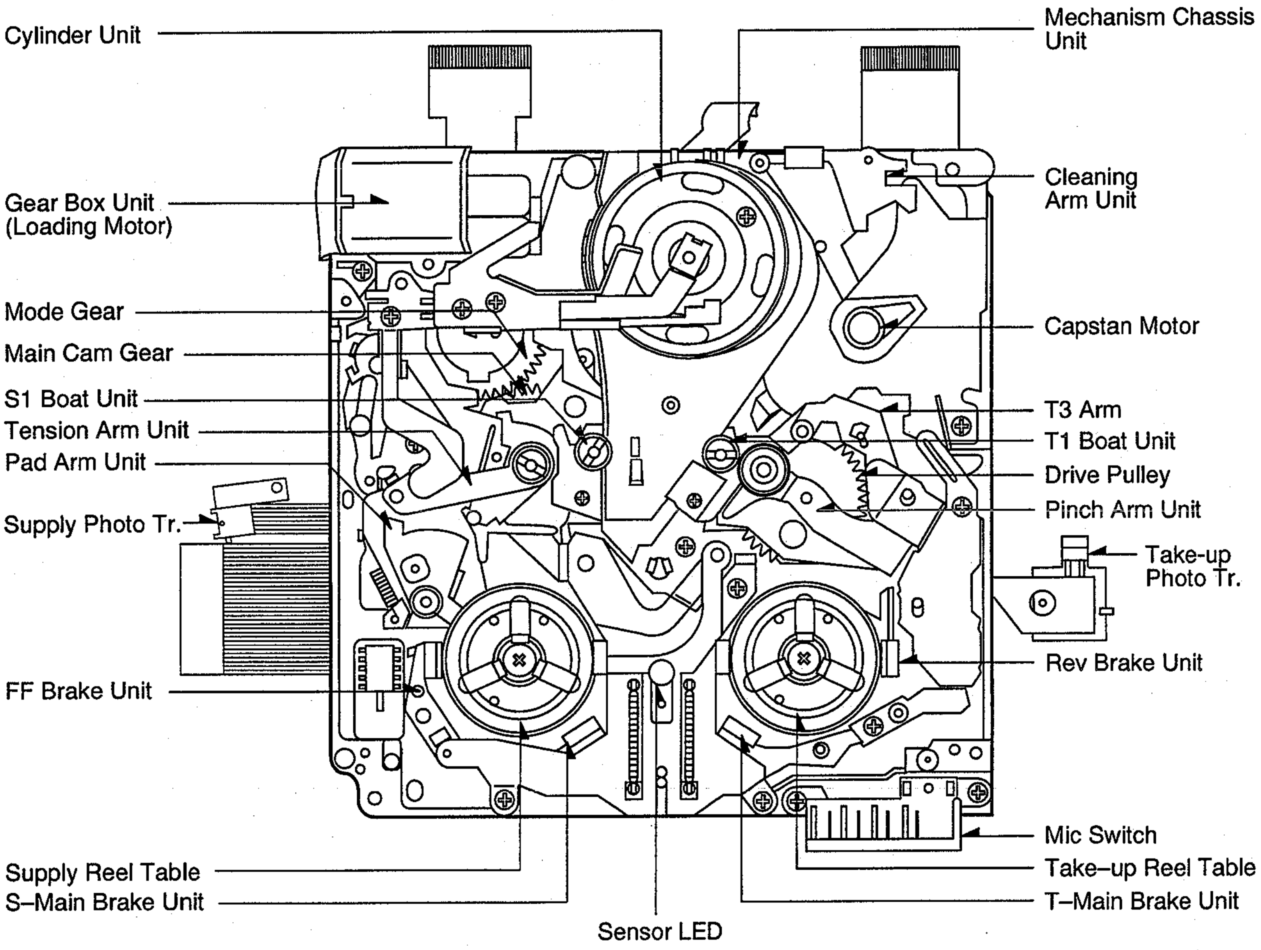

Cylinder Unit
Mechanism Chassis Unit
Gear Box Unit (Loading Motor)
Cleaning Arm Unit
Mode Gear
Main Cam Gear
Capstan Motor
S1 Boat Unit
Tension Arm Unit
Pad Arm Unit
T3 Arm
T1 Boat Unit
Drive Pulley
Pinch Arm Unit
Supply Photo Tr.
Take-up Photo Tr.
Rev Brake Unit
FF Brake Unit
Mic Switch
Supply Reel Table
S–Main Brake Unit
Take–up Reel Table
T–Main Brake Unit
Sensor LED

Fig. 1

2. Disassembly/Assembly Procedures of Mechanism

This procedure starts with the condition that the mechanism unit has been removed from the unit.
The following chart indicates disassembly steps of the mechanical parts in order to gain access to part for servicing. When reassembling, perform the steps in the reverse order. Then apply the Molyton Grease to the lubrication point.

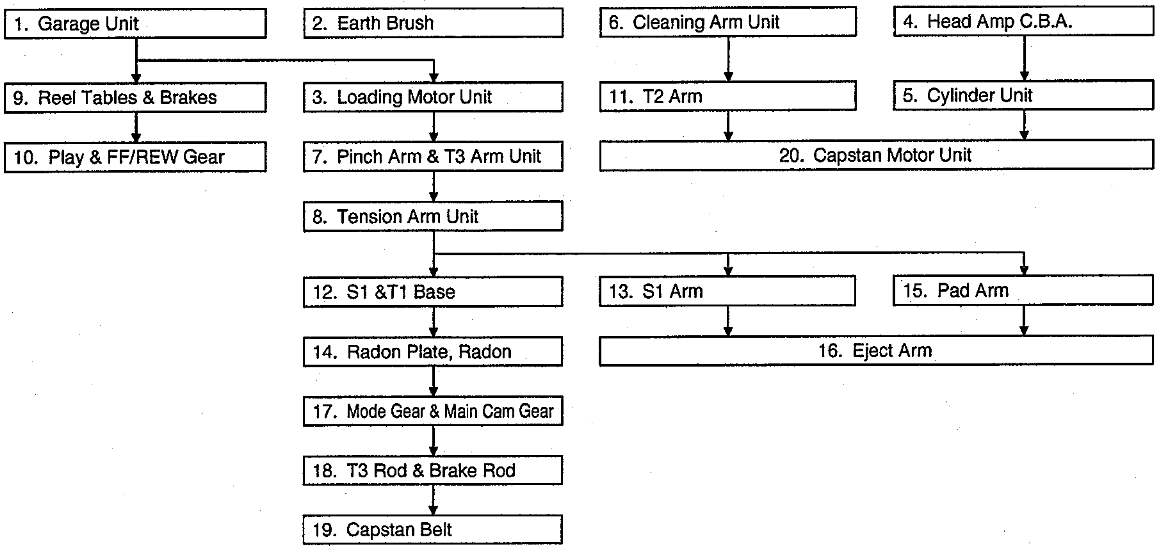

1. Garage Unit
2. Earth Brush
6. Cleaning Arm Unit
4. Head Amp C.B.A.
9. Reel Tables & Brakes
3. Loading Motor Unit
11. T2 Arm
5. Cylinder Unit
10. Play & FF/REW Gear
7. Pinch Arm & T3 Arm Unit
20. Capstan Motor Unit
8. Tension Arm Unit
12. S1 &T1 Base
13. S1 Arm
15. Pad Arm
14. Radon Plate, Radon
16. Eject Arm
17. Mode Gear & Main Cam Gear
18. T3 Rod & Brake Rod
19. Capstan Belt

Fig. 2

1. Garage Unit	Fig. M1	Slide the Lock Lever using tweezers to eject the Garage Unit.
(Manual Eject)	Fig. M2	Unscrew 2 screws (A) and remove Supply and Take-up Photo Transistors from Garage Unit. Unscrew 4 screws (B) and remove the Garage Unit.
2. Earth Brush	Fig. M3	Unscrew 2 screws (C) and remove the Earth Brush.
(Note of installation)	Fig. M4	When installing the Earth Brush, align the Earth Brush tip position.
3. Loading Motor Unit	Fig. M5	Unsolder the soldered portion (D). Unscrew 2 screws (E) and remove the Loading Motor Unit.
4. Head Amp C.B.A.	Fig. M6	Unscrew screw (F) and remove the Capstan Cover. Disconnect FP5001. Unscrew 2 screws (G) and remove the Head Amp C.B.A..
5. Cylinder Unit	Fig. M7	Unscrew 3 screws (H) and remove the Cylinder Unit carefully. Do not touch the Video Head.
6. Cleaning Arm Unit	Fig. M8	Unlock the locking portion of the Cleaning Arm Unit.
(Note of installation)	Fig. M9	Hooking portion of the Cleaning Arm Spring is; Spring (a) —— Cleaning Arm Spring (a') Spring (b) —— T2 Arm Unit (b')
7. Pinch Arm & unlock T3 Arm Unit	Fig. M10	Unscrew screw (I), then slide the Pinch Pressure Plate and unlock the locking portion.
	Fig. M11	Remove the T3 Arm Unit.
(Note of installation)		After installed T3 Arm Unit, the Height Adjustment is required.
	Fig. M12	Remove the Pinch Arm Unit and Pinch Arm Spring.
(Note of installation)		Hooking portion of the Pinch Arm Spring is; Spring (c) —— Pinch Arm (c') Spring (d) —— T3 Rod (d')
8. Tension Arm Unit	Fig. M13	Turn the Mode Gear to counter-clockwise until Tension Arm Unit slightly move to loading direction. Remove the Tension Arm Unit and Cut Washer (J).
(Note of installation)		The projection (e) on Tension Arm meets guide (e') on the T3 Rod which is shifted by turning Mode Gear.
9. Reel Tables & Brakes	Fig. M14	Unhook the hooking portion (f) and (f'). Unscrew 3 screws (K) and remove Cover Plate.
	Fig. M15	Remove Supply and Take-up Reel Tables.

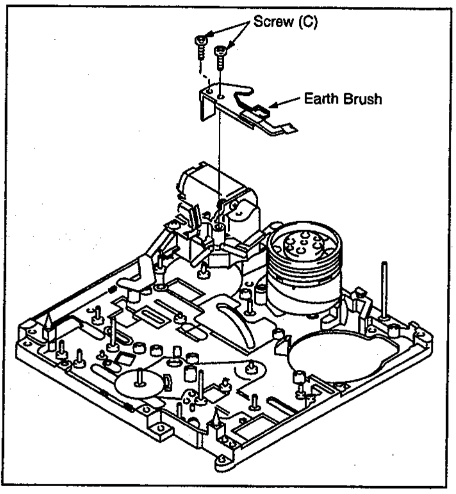

Screw (C)
Earth Brush

Fig. M3

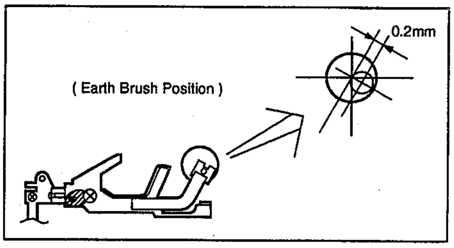

0.2mm
(Earth Brush Position)

Fig. M4

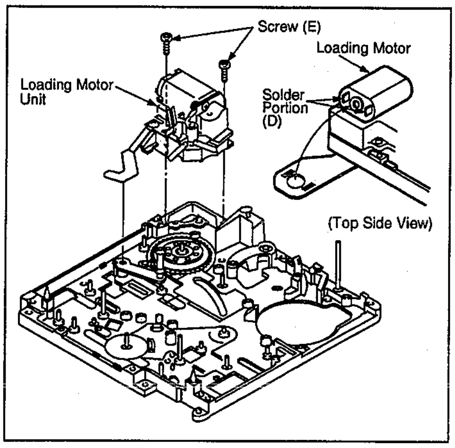

Screw (E)
Loading Motor
Loading Motor Unit
Solder Portion (D)
(Top Side View)

Fig. M5

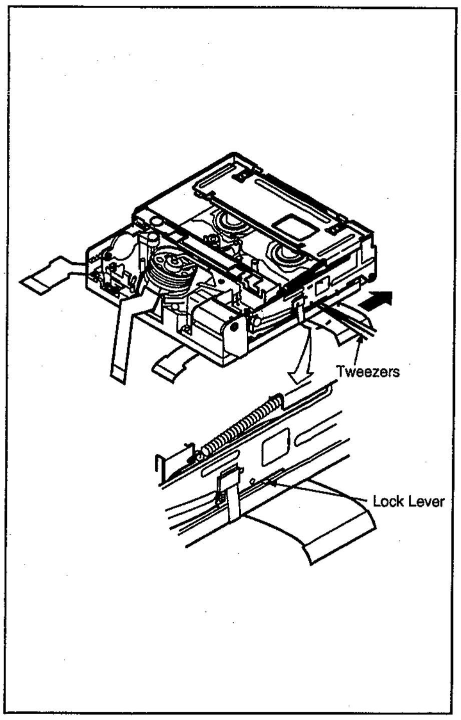

Tweezers
Lock Lever

Fig. M1

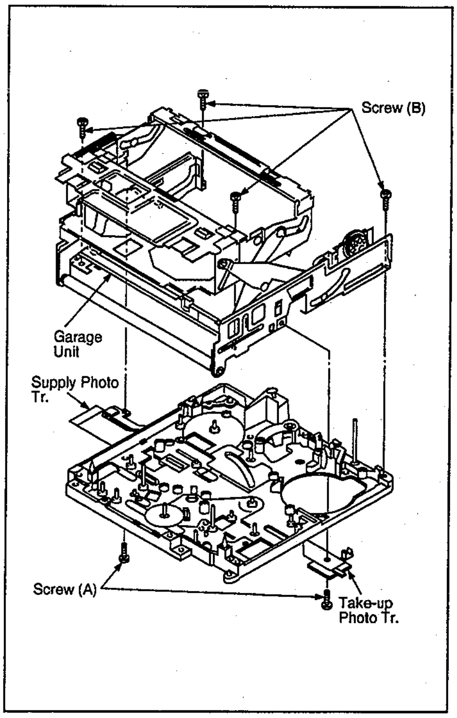

Screw (B)
Garage Unit
Supply Photo Tr.
Screw (A)
Take-up Photo Tr.

Fig. M2

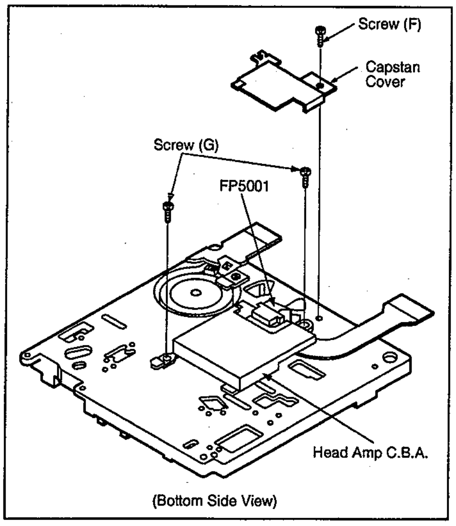

Screw (F)
Capstan Cover
Screw (G)
FP5001
Head Amp C.B.A.
(Bottom Side View)

Fig. M6

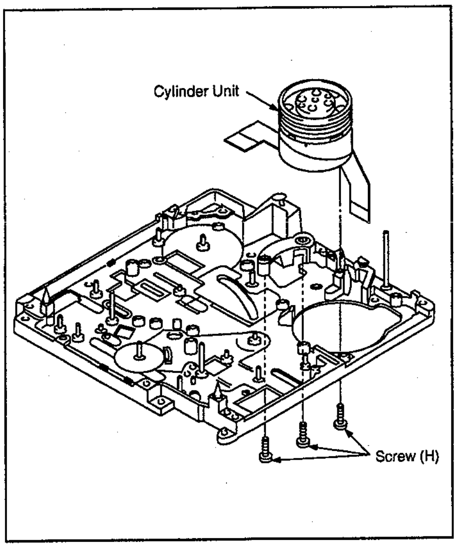

Cylinder Unit
Screw (H)

Fig. M7

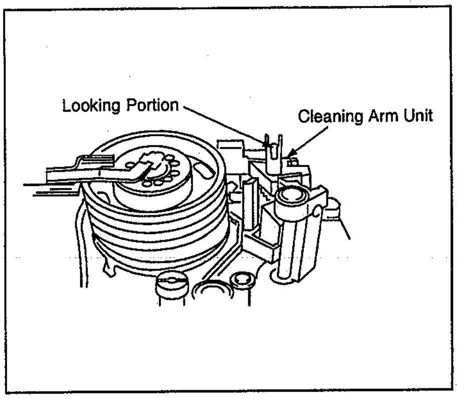

Looking Portion
Cleaning Arm Unit

Fig. M8

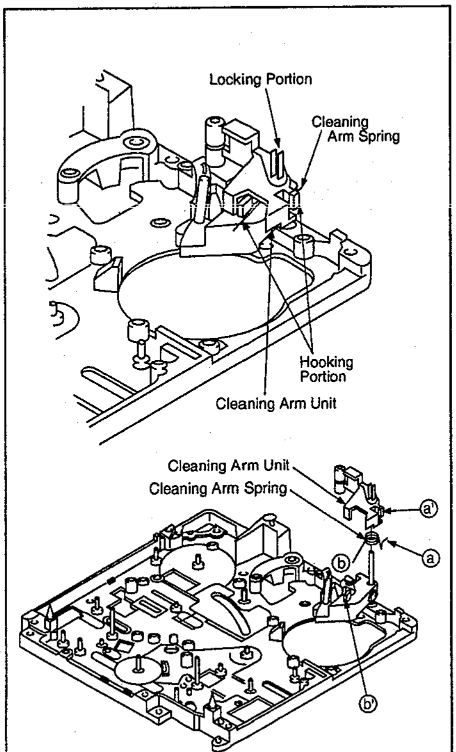

Locking Portion
Cleaning Arm Spring
Hooking Portion
Cleaning Arm Unit
Cleaning Arm Unit
Cleaning Arm Spring
ⓐ'
ⓐ
ⓑ
ⓑ'

Fig. M9

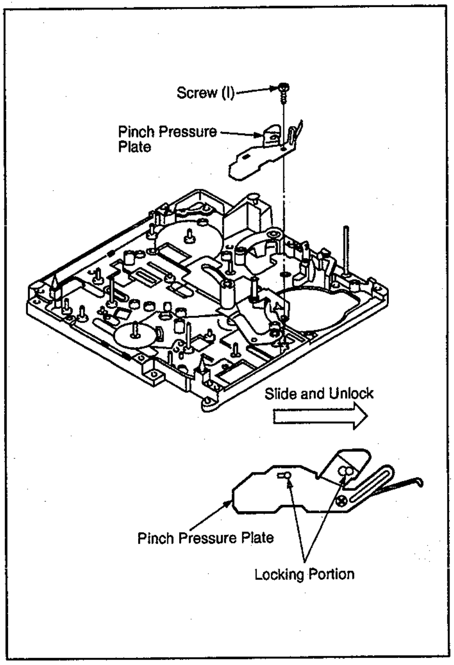

Screw (I)
Pinch Pressure Plate
Slide and Unlock
Pinch Pressure Plate
Locking Portion

Fig. M10

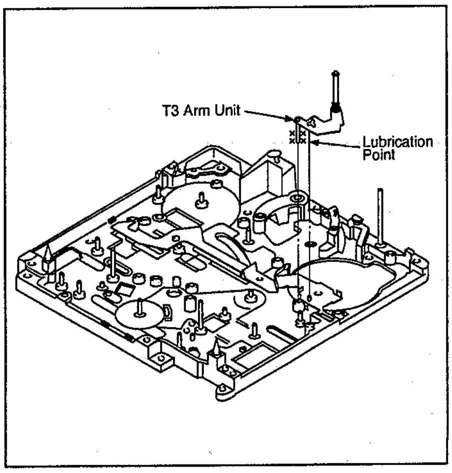

T3 Arm Unit
Lubrication Point

Fig. M11

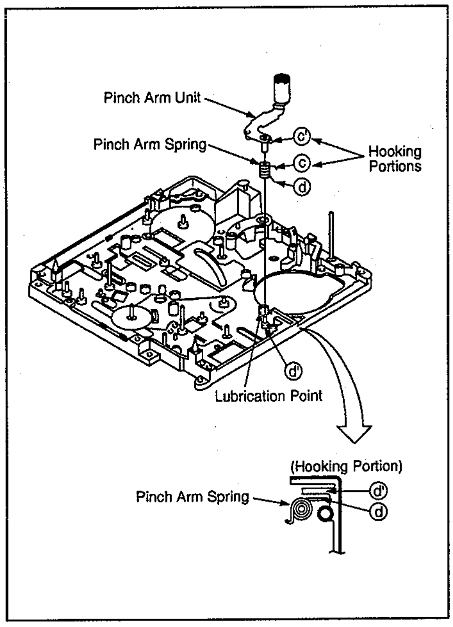

Pinch Arm Unit
Pinch Arm Spring
ⓒ'
ⓒ
ⓓ
Hooking Portions
ⓓ'
Lubrication Point
(Hooking Portion)
Pinch Arm Spring
ⓓ'
ⓓ

Fig. M12

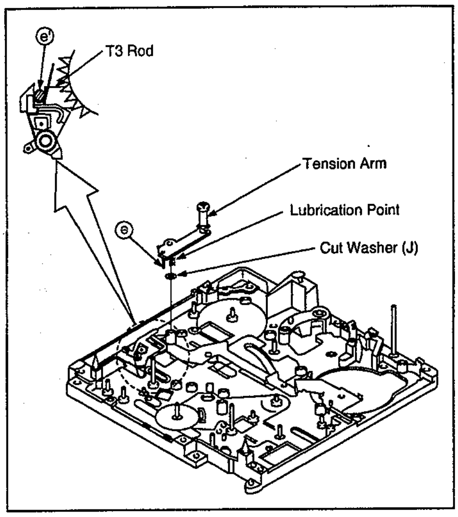

ⓔ'
T3 Rod
Tension Arm
Lubrication Point
ⓔ
Cut Washer (J)

Fig. M13

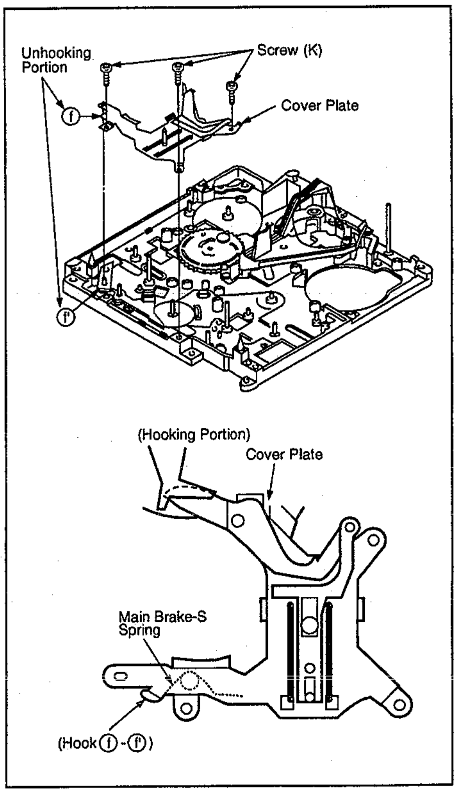

Unhooking Portion
Screw (K)
ⓕ
Cover Plate
ⓕ'
(Hooking Portion)
Cover Plate
Main Brake-S Spring
(Hook ⓕ-ⓕ')

Fig. M14

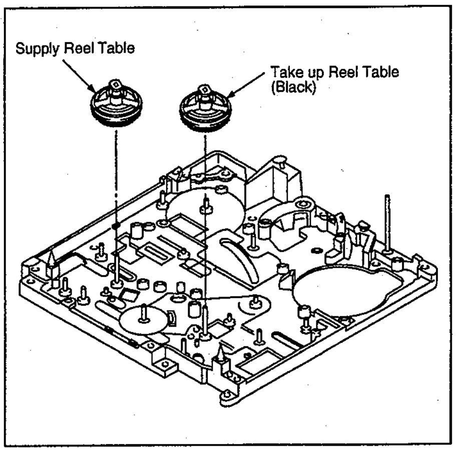

Supply Reel Table
Take up Reel Table (Black)

Fig. M15

	Fig. M16	Unhook the hooking portion (g) and (g') of the Review Brake Spring and remove Review Brake.
	Fig. M17	Remove the FF Brake and FF Brake Spring.
(Note of installation)		Confirm the hooking portion of the FF Brake Spring.
	Fig. M18	Remove the Main Brake S and Main Brake-S Spring.
(Note of installation)		Confirm the hooking portion of the Main Brake-S Spring.
	Fig. M19	Remove the Cut Washer (L) and Main Brake T Unit.
(Note of installation)		Confirm the hooking portion of the Main Brake T Spring.
10. Play & FF/REW Gear	Fig. M20	Remove the Play Idler and Play Gear.
11. T2 Arm Unit	Fig. M21	Remove the Cut Washer (M) and T2 Arm Unit with Spring.
(Note of installation)		Confirm the hooking portion of the T2 Arm Spring.
12. S1 &T1 Base	Fig. M22	Turn the Mode Gear to counter-clockwise until half loading position. Hold (N) and (O) positions on S1 and T1 Arm units and unlock the locking portions (A) and (B) with tweezers.
	Fig. M23	Remove 2 screws (P) and Cylinder Base Unit with S and T Boat Units. Then remove S and T Boat Units from the Cylinder Base Unit.
(Note of installation)		After install the Cylinder Base Unit, S and T Boat move to completed loading position by finger and turn the Mode Gear to clockwise until half loading position. Then connect the locking portion (A) and (B).
13. S1 Arm	Fig. M24	Turn the Mode Gear to fully counter-clockwise. Remove the Cut Washer (Q) and S1 Arm Unit.
14. Radon Plate, Radon Arm & T1 Arm	Fig. M25 Fig. M26	Unscrew 2 screws (R) and remove Radon Plate. Unscrew screw (S) and remove Radon Arm Unit.
(Note of installation)		When installing the T1 Arm Unit, the projection (j) on the Radon Arm Unit is aligned to guide (j') on the T1 Arm Unit by pushing the T1 Arm Unit.
	Fig. M27	Remove the T1 Arm Unit.
15. Pad Arm	Fig. M28	Unhook the hooking portion (k') of the Pad Arm Spring. Remove the Cut Washer (T) and Pad Arm Unit.
(Note of installation)		Confirm the hooking portion of the Pad Arm Spring (k —— k').
16. Eject Arm	Fig. M29	Unscrew 2 screws (U) and remove the Eject Arm Unit.
17. Mode Gear & Main Cam Gear	Fig. M30	Remove the Main Cam Gear. Unsolder the soldered portion (l) on the Mechanism Flexible Board. Then remove the Mode Gear.
(Note of installation)		The projection (m) on the Mode Gear meets the hole (m') on the Mechanism Chassis. Push the Brake and T3 Rod in fully left direction.

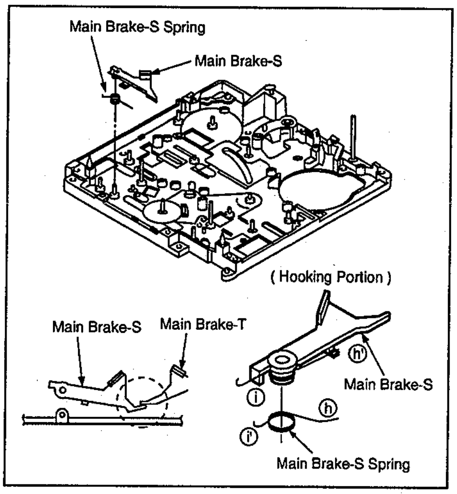

Main Brake-S Spring
Main Brake-S
(Hooking Portion)
Main Brake-S
Main Brake-T
h'
Main Brake-S
i
h
i'
Main Brake-S Spring

Fig. M18

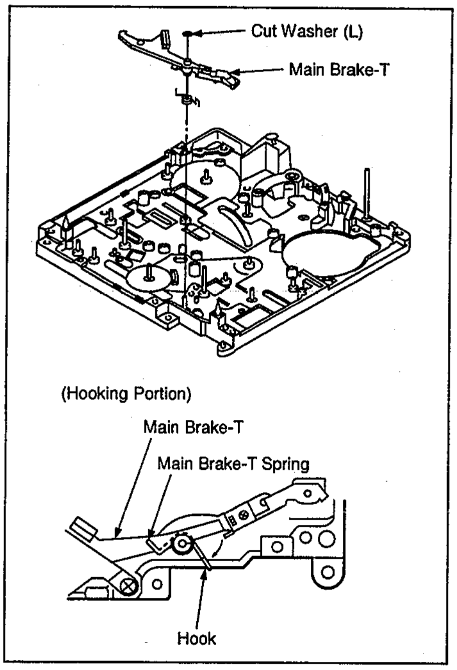

Cut Washer (L)
Main Brake-T
(Hooking Portion)
Main Brake-T
Main Brake-T Spring
Hook

Fig. M19

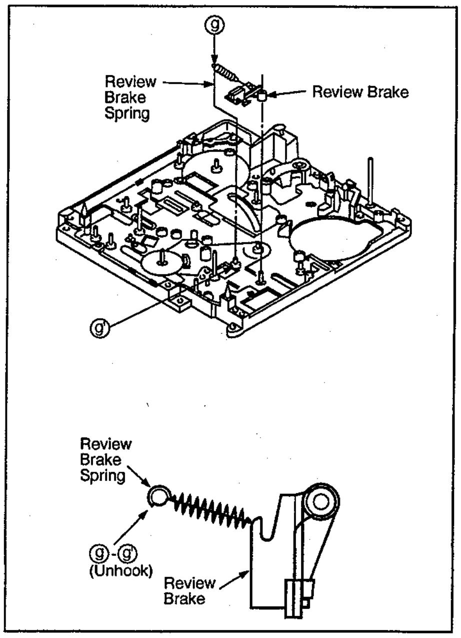

g
Review Brake Spring
Review Brake
g'
Review Brake Spring
g-g'
(Unhook)
Review Brake

Fig. M16

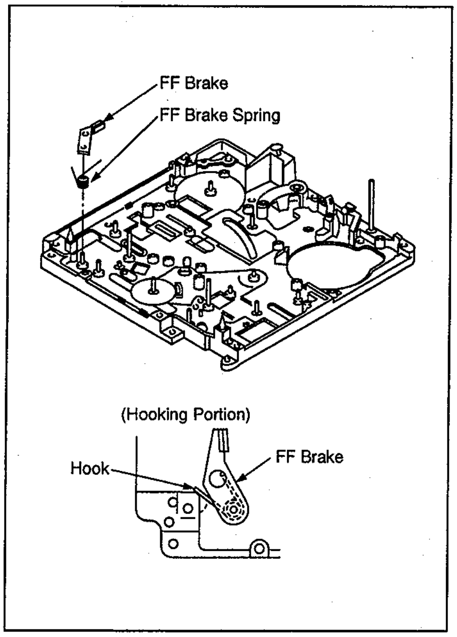

FF Brake
FF Brake Spring
(Hooking Portion)
Hook
FF Brake

Fig. M17

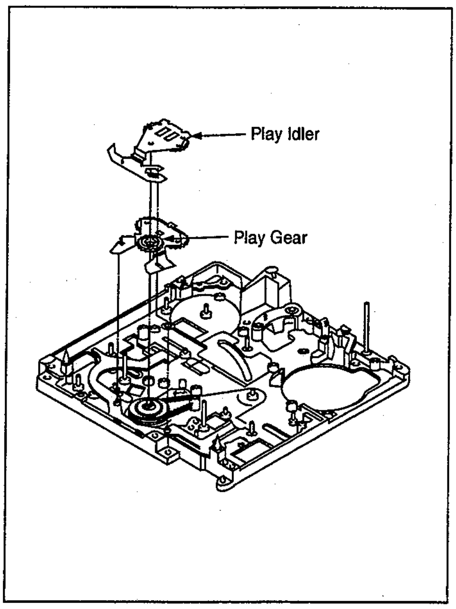

Play Idler
Play Gear

Fig. M20

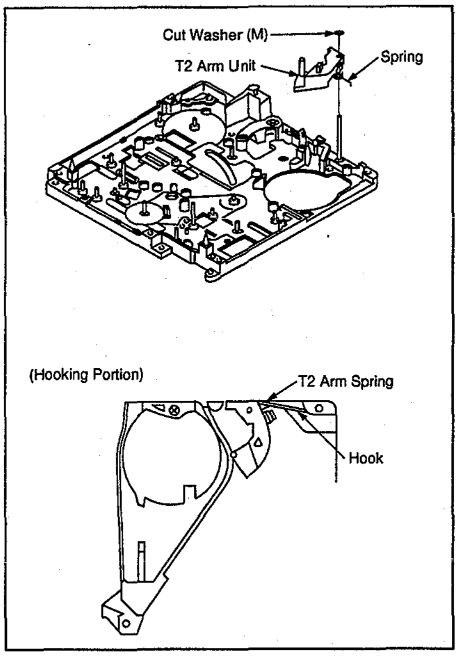

Cut Washer (M)
T2 Arm Unit
Spring
(Hooking Portion)
T2 Arm Spring
Hook

Fig. M21

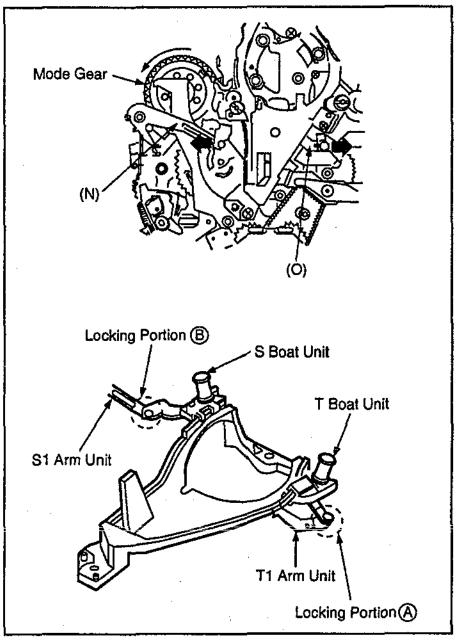

Mode Gear
(N)
(O)
Locking Portion Ⓑ
S Boat Unit
T Boat Unit
S1 Arm Unit
T1 Arm Unit
Locking Portion Ⓐ

Fig. M22

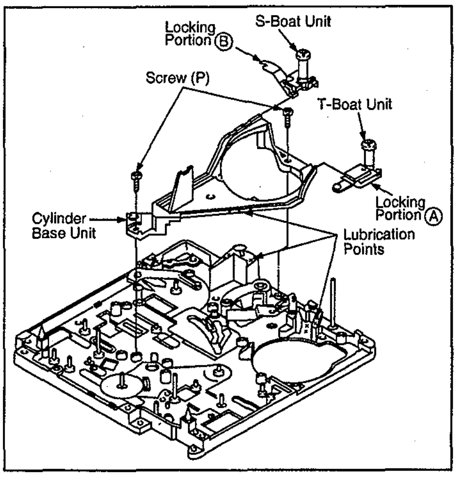

Locking Portion Ⓑ
S-Boat Unit
Screw (P)
T-Boat Unit
Locking Portion Ⓐ
Cylinder Base Unit
Lubrication Points

Fig. M23

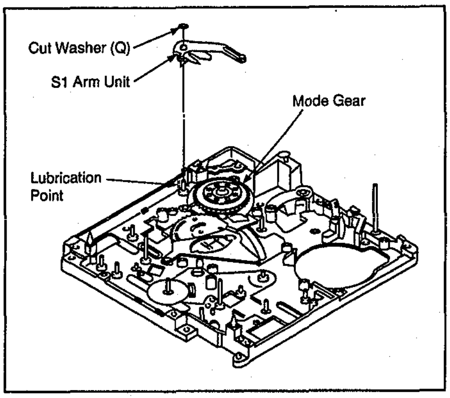

Cut Washer (Q)
S1 Arm Unit
Mode Gear
Lubrication Point

Fig. M24

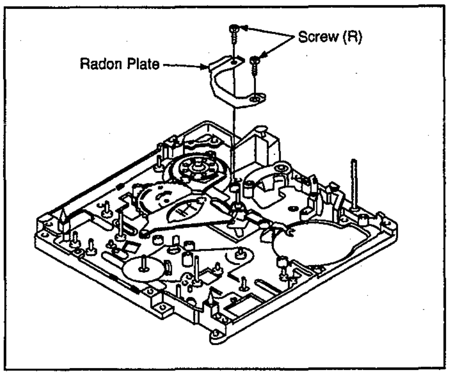

Screw (R)
Radon Plate

Fig. M25

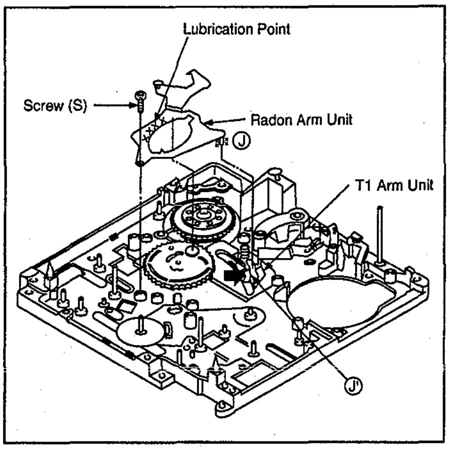

Lubrication Point
Screw (S)
Radon Arm Unit
Ⓙ
T1 Arm Unit
Ⓙ'

Fig. M26

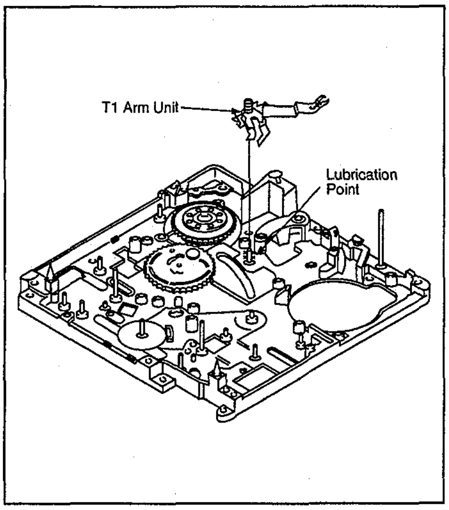

T1 Arm Unit
Lubrication Point

Fig. M27

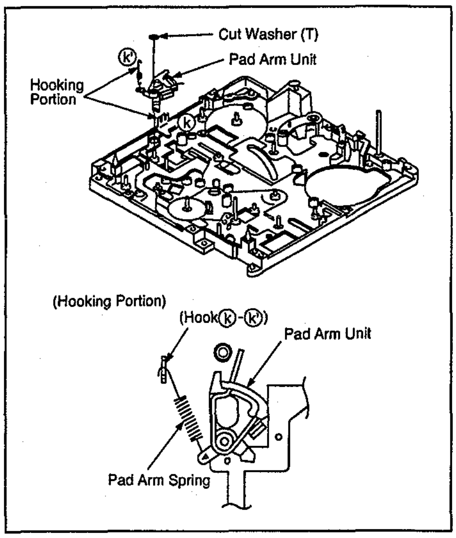

Cut Washer (T)
ⓚ'
Pad Arm Unit
Hooking Portion
ⓚ
(Hooking Portion)
(Hook ⓚ-ⓚ')
Pad Arm Unit
Pad Arm Spring

Fig. M28

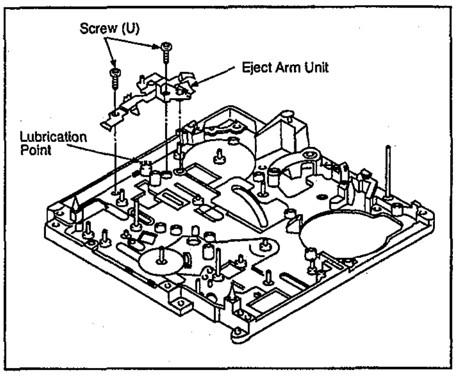

Screw (U)
Eject Arm Unit
Lubrication Point

Fig. M29

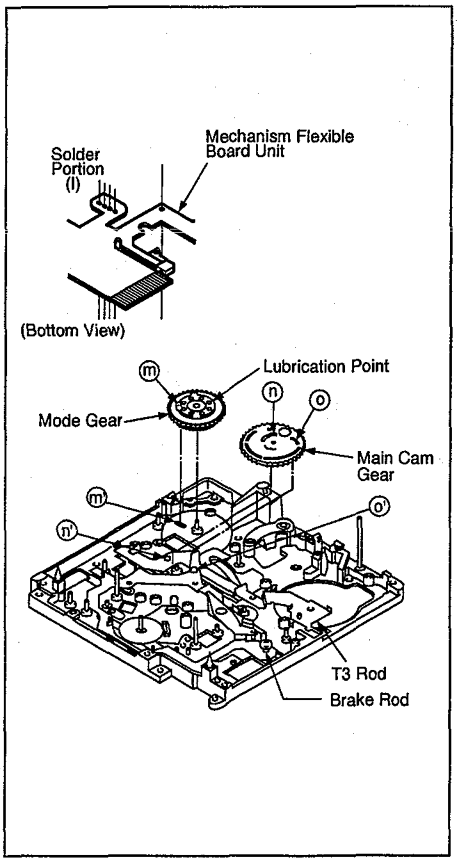

Solder Portion (I)
Mechanism Flexible Board Unit
(Bottom View)
ⓜ
Lubrication Point
ⓝ
ⓞ
Mode Gear
Main Cam Gear
ⓜ'
ⓞ'
ⓝ'
T3 Rod
Brake Rod

Fig. M30

(Note of installation)	Fig. M31	Install the Main Cam Gear so that the hole A on the Mode Gear is aligned to the hole B on the Main Cam Gear.
	Fig. M30	Shift the T3 Rod slowly in the right direction until guide (n) on the Main Cam Gear meets the projection (n') on the T3 Rod. Shift the Brake Rod slowly in the right direction until guide (o) on the Main Cam Gear meets the projection (o') on the Brake Rod.
18. T3 Rod & Brake Rod	Fig. M32	Remove the T3 Rod.
(Note of installation)		The projection (p) and (q) on the T3 Rod meet the guide (p') and (q') on the Mechanism Chassis.
	Fig. M33	Unscrew 2 screws (V) and remove the Brake Rod, Brake Rod Plate A and B.
(Note of installation)		The projection (r) and (s) on the Brake Rod meet the guide (r') and (s') on the Mechanism Chassis.
19. Capstan Belt	Fig. M34	Remove the Center Gear and Washer (W). Unscrew screw (X) and remove LED Holder. Remove Cut Washer (Y).
	Fig. M35	(Loosen a black screw on the Cap. Motor as shown in Fig. M36.) Slightly lift up in the direction and slowly remove the Capstan Gear. Do not bend the Capstan Shaft.
(Note of installation)		After installed Capstan Gear, confirm no warp of the Capstan Gear, no bend of the Capstan Gear Shaft and rotation of the Capstan and Center Gear smoothly.
	Fig. M34	Remove the Capstan Belt.
20. Capstan Motor Unit	Fig. M36	Unscrew 3 screws (Z) and remove Capstan Motor.
(Note of installation)		After installed Capstan Motor, Cap. Tilt Adjustment is required.

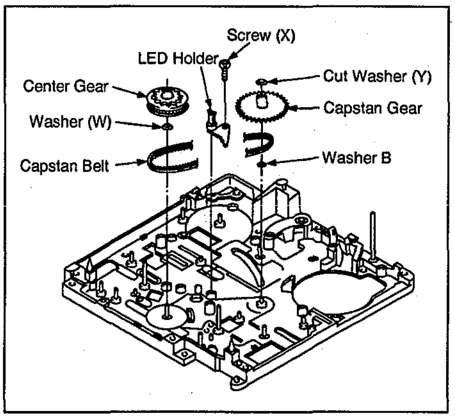

Screw (X)
LED Holder
Center Gear
Washer (W)
Capstan Belt
Cut Washer (Y)
Capstan Gear
Washer B

Fig. M34

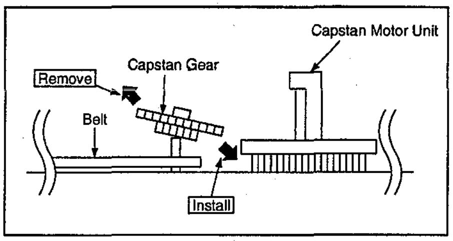

Capstan Motor Unit
Capstan Gear
Remove
Belt
Install

Fig. M35

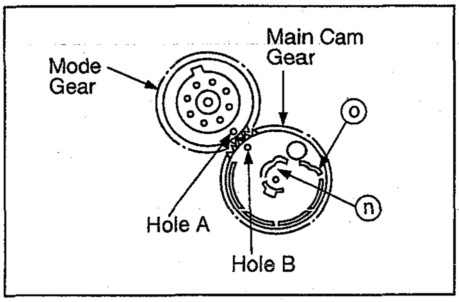

Main Cam Gear
Mode Gear
o
n
Hole A
Hole B

Fig. M31

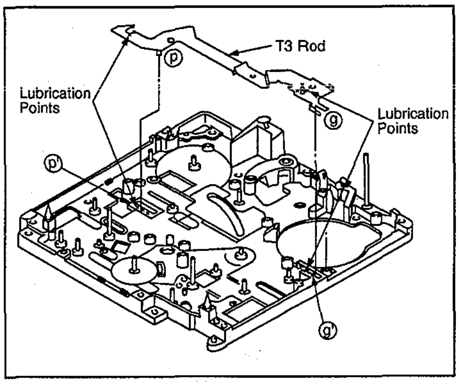

T3 Rod
p
Lubrication Points
q
Lubrication Points
p'
q'

Fig. M32

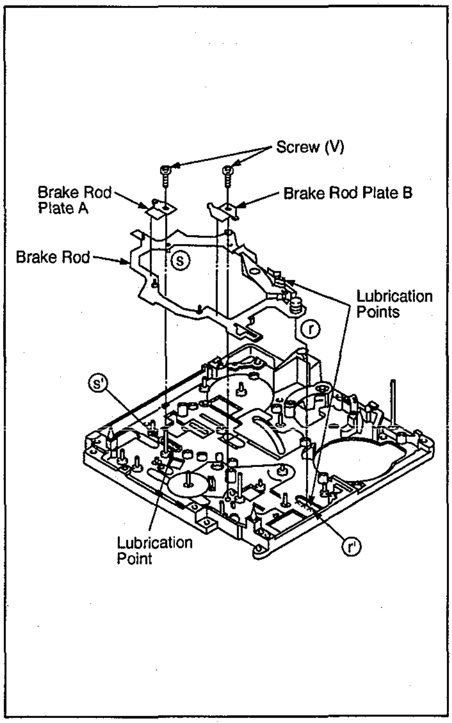

Screw (V)
Brake Rod Plate A
Brake Rod Plate B
Brake Rod
s
Lubrication Points
r
s'
Lubrication Point
r'

Fig. M33

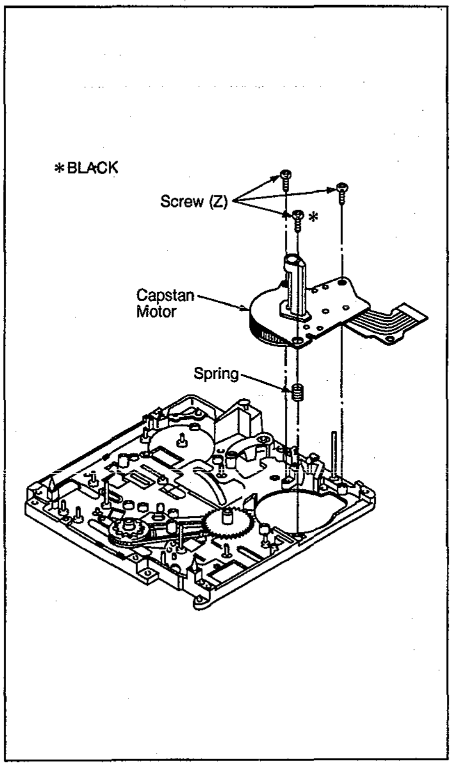

*BLACK
Screw (Z)
*
Capstan Motor
Spring

Fig. M36

3. Mechanical Adjustment Procedure

3-1. Test Equipment and Tools

The following equipment is required for Mechanical adjustment.

1.	———	Tatsujin Kit for adjustment with PC
	VFKW1000AA	PC-EVR I/F Unit
	VFKW1000C	PC-EVR 232C Cable
	VFKW0F0142	PC-EVR I/F Board
	VFKW0F0001	Common Cable (2 pcs)
	VFKW0T0006	Sub I/F Board for Video
	VFKW0T0008	Video Attachment Cable
	———	PC-EVR Software for NV-DX1
	———	Personal Computer

2. VFK1234 BER Counter

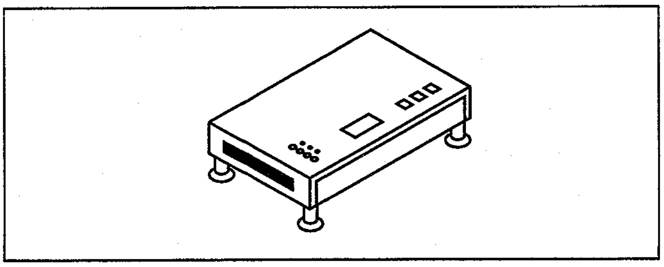


Fig. A1 For monitoring the Bit Error Rate

3. VFK1263 Counter Cables

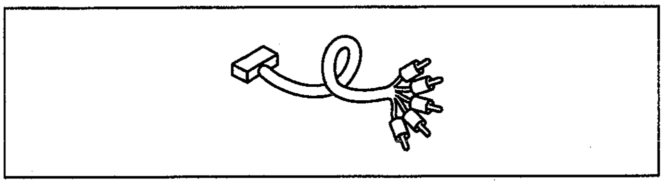


Fig. A2 For connection of the BER Counter

4. VFM3010EDS Alignment Tape

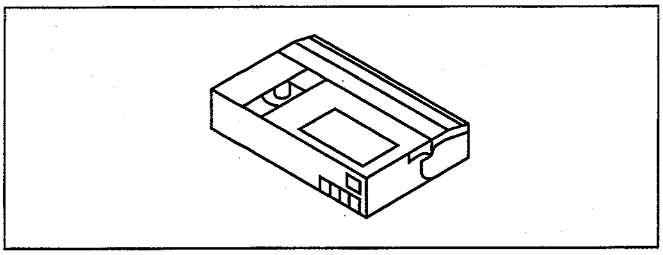


Fig. A3 For B.E.R. Adjustment

5. VFK1217 Sensor Cassette

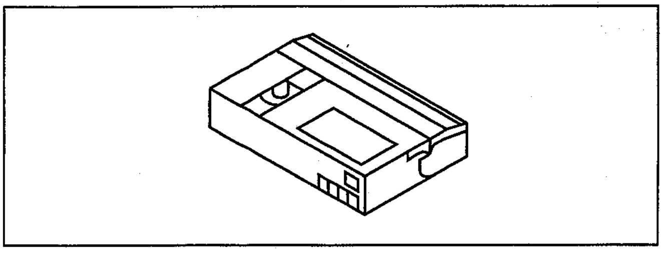


Fig. A4 For Sensor Adjustment

6. VFK1281 Mechanism Plate

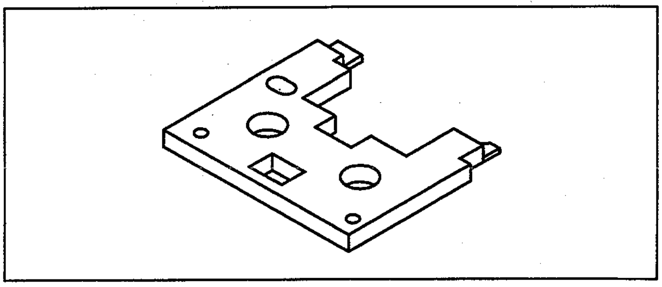


Fig. A5 For Post & Reel Height Adjustment

7. VFK1278 Post Adjustment Drive

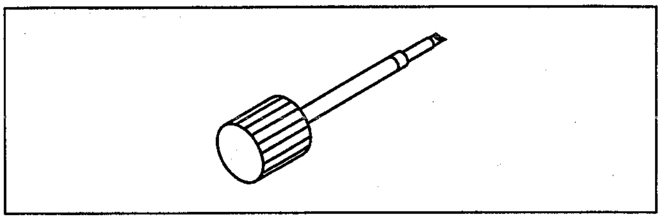


Fig. A6 For Post & Reel Height Adjustment

8. VFK1279 Cap. Tilt Adj. Plate

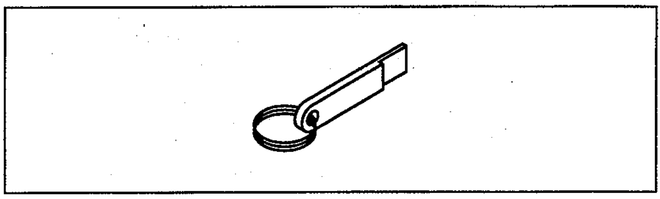


Fig. A7 For Capstan Tilt Adjustment

9. VFK1276 Loading Gear Driver

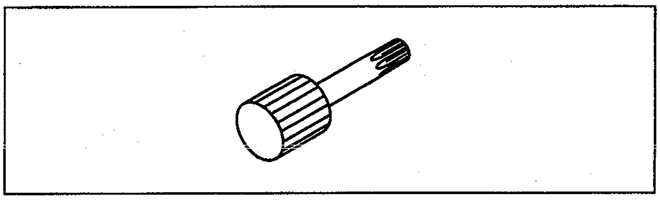


Fig. A8 For manual loading/unloading

3-2. Mechanism Adjustment

When the following parts is replaced, the mechanical adjustment is required.

Tension Post
T3 Post
Pad Arm Unit
Supply or Take-up Reel Tables
Capstan Motor

<PREPARATION>

Remove the Garage Unit and Loading Motor Unit as shown in Fig. M1 to M5.

1. Tension Post & T3 Post Height Adjustment

1. Set the Mechanism Plate (VFK1281) on the Mechanism Chassis.

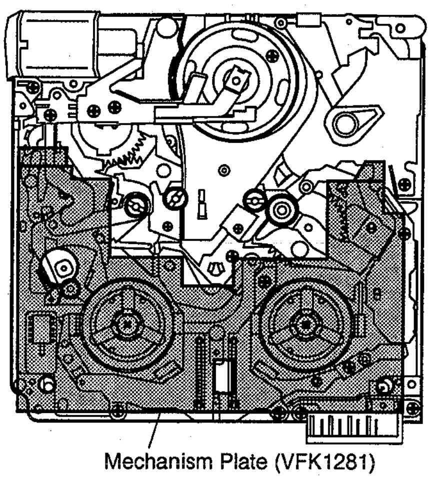

Mechanism Plate (VFK1281)

Fig. A9

2. Turn the Mode Gear fully counterclockwise to make full loading condition by using Loading Gear Driver (VFK1276).

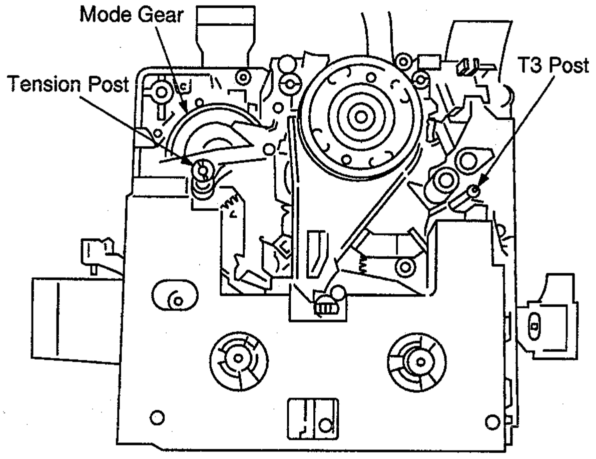

Mode Gear
Tension Post
T3 Post

Fig. A10

3. Adjust the Tension Post so that the lower flange (A) point become same height level to the top surface (B) of 2nd step of the Mechanism Plate as shown in Fig. A11.
4. Adjust the T3 Post so that the lower flange (C) point become same height level to the top surface (D) of the Mechanism Plate as shown in Fig. A11.

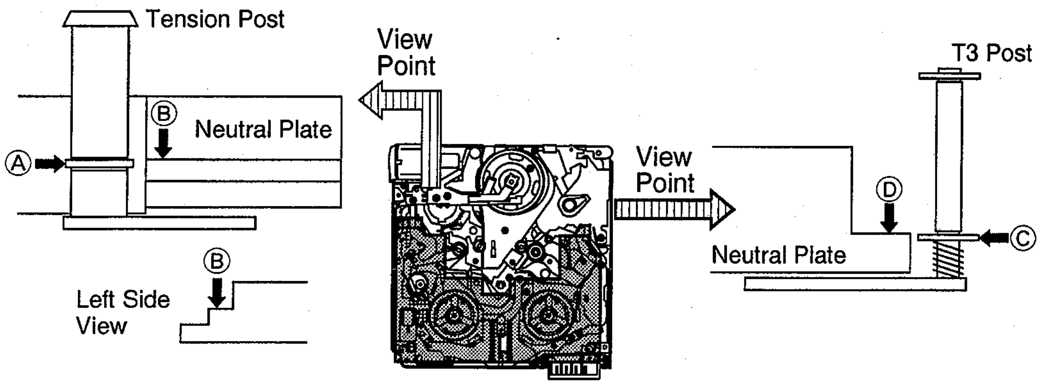

Tension Post
Ⓑ
Neutral Plate
Ⓐ
Ⓑ
Left Side View
View Point
View Point
T3 Post
Ⓓ
Neutral Plate
Ⓒ

Fig. A11

2. Tension Post Position Adjustment

1. Turn the adjustment piece on the Pad Arm Unit to fully counterclockwise.
2. Turn the Mode Gear to set the Mechanism position in the Play mode, the Soft Brake of the Pad Arm Unit just touch to the Supply Reel Table as shown in Fig. A12.
3. Set the Mechanism Plate on the Mechanism Chassis as shown in Fig. A9.
4. Adjust the adjustment piece on the Pad Arm Unit to clockwise direction slowly until the surface of the Tension Post comes to 2nd step (F) on the Mechanism Plate as shown in Fig. A12.

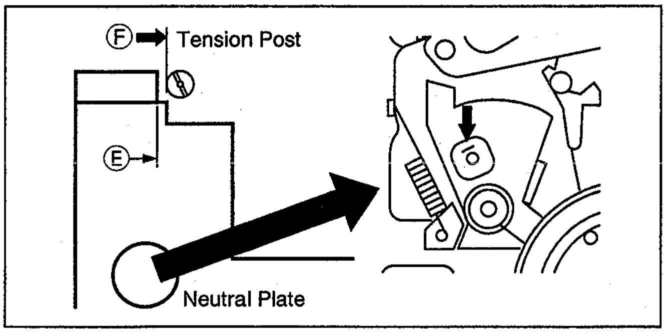

Ⓕ
Tension Post
Ⓔ
Neutral Plate

Fig. A12

5. After adjustment, turn the Mode Gear to unloading direction then turn back to loading direction, and make sure that position is correctly stop at above specification in Play position.

3. Supply & Take-up Reel Tables Height Adjustment

This adjustment should be perform for Supply or Take-up Reel Table one by one.

1. Turn the adjustment screw (A) on top of the Supply or Take-up Reel Table fully clockwise. Then, place the Mechanism Plate on the Mechanism Chassis as shown in Fig. A9.
2. Hold the Mechanism Plate by finger and slowly turn the adjustment screw to counterclockwise until just Reel Table rotating with adjustment screw as shown in Fig. A13.
3. Remove the Mechanism Plate and hold the Reel Table by finger then turn the adjustment screw counterclockwise to 45 degrees from above step point.

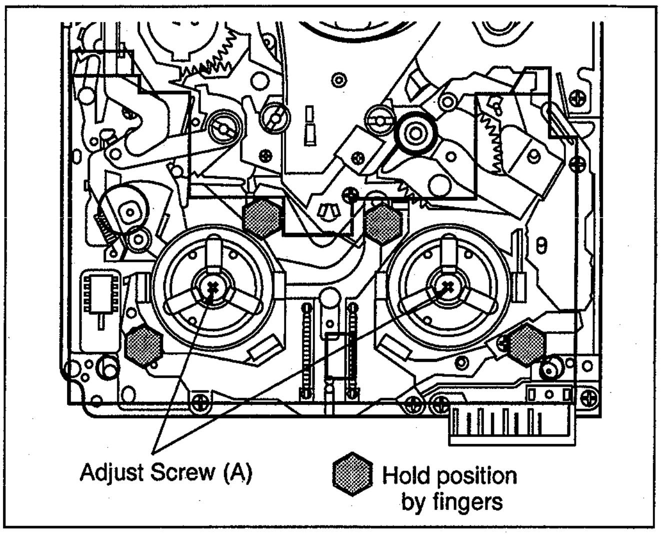

Adjust Screw (A)
Hold position by fingers

Fig. A13

4. Cap. Tilt Adjustment

1. Loosen the adjustment screw (G) and set the Cap. Tilt Adj. Plate (VFK1279) between Capstan Motor and Mechanism Chassis.
2. Turn the adjustment screw (G) to clockwise direction slowly until the Capstan Motor just touch to the Cap. Tilt Adj. Plate as shown in Fig. A14.

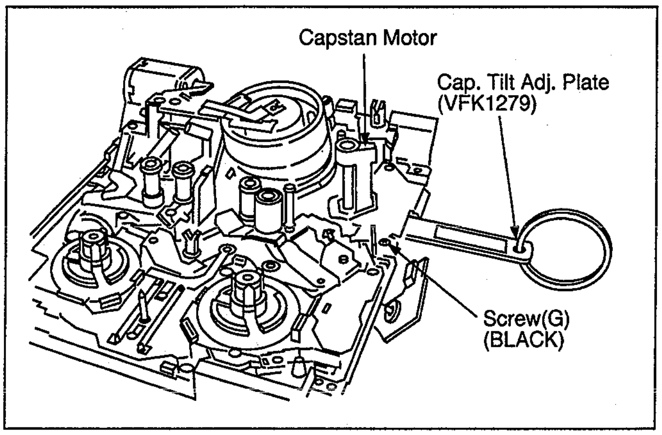

Capstan Motor
Cap. Tilt Adj. Plate (VFK1279)
Screw(G) (BLACK)

Fig. A14

5. Confirmation

5-1. Confirmation of tape travel

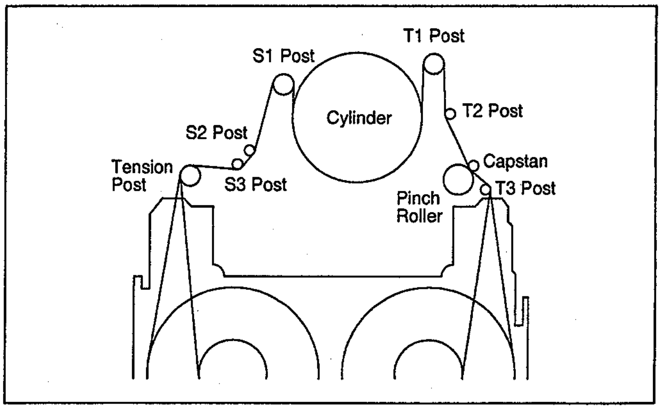

T1 Post
S1 Post
Cylinder
T2 Post
S2 Post
Tension Post
S3 Post
Capstan
T3 Post
Pinch Roller

Fig. A15

Play back the cassette tape and confirm that the tape travels without curling at the upper and lower guides on the following posts in the Play and REV modes as shown in Fig. A17.

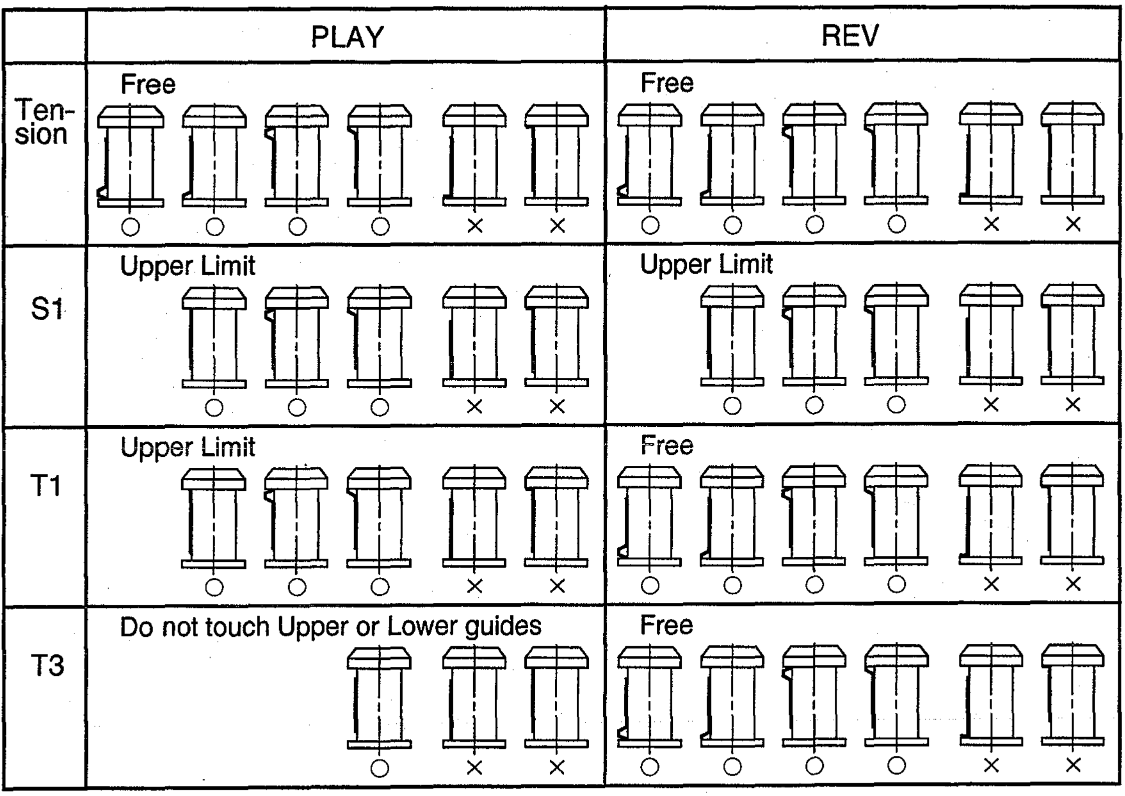

PLAY
REV
Ten-sion
Free
○ ○ ○ ○ × ×
Free
○ ○ ○ ○ × ×
S1
Upper Limit
○ ○ ○ × ×
Upper Limit
○ ○ ○ × ×
T1
Upper Limit
○ ○ ○ × ×
Free
○ ○ ○ ○ × ×
T3
Do not touch Upper or Lower guides
○ × ×
Free
○ ○ ○ ○ × ×

Fig. A16

If there are curing or damage at the guide of posts, readjust the height of the posts by turning the post with the Post Adjustment Driver.

5-2. Confirmation of the Envelope Output

1. Connect the "Tatsujin Kit" for video section as shown follows and play back a self recorded colour bar tape.

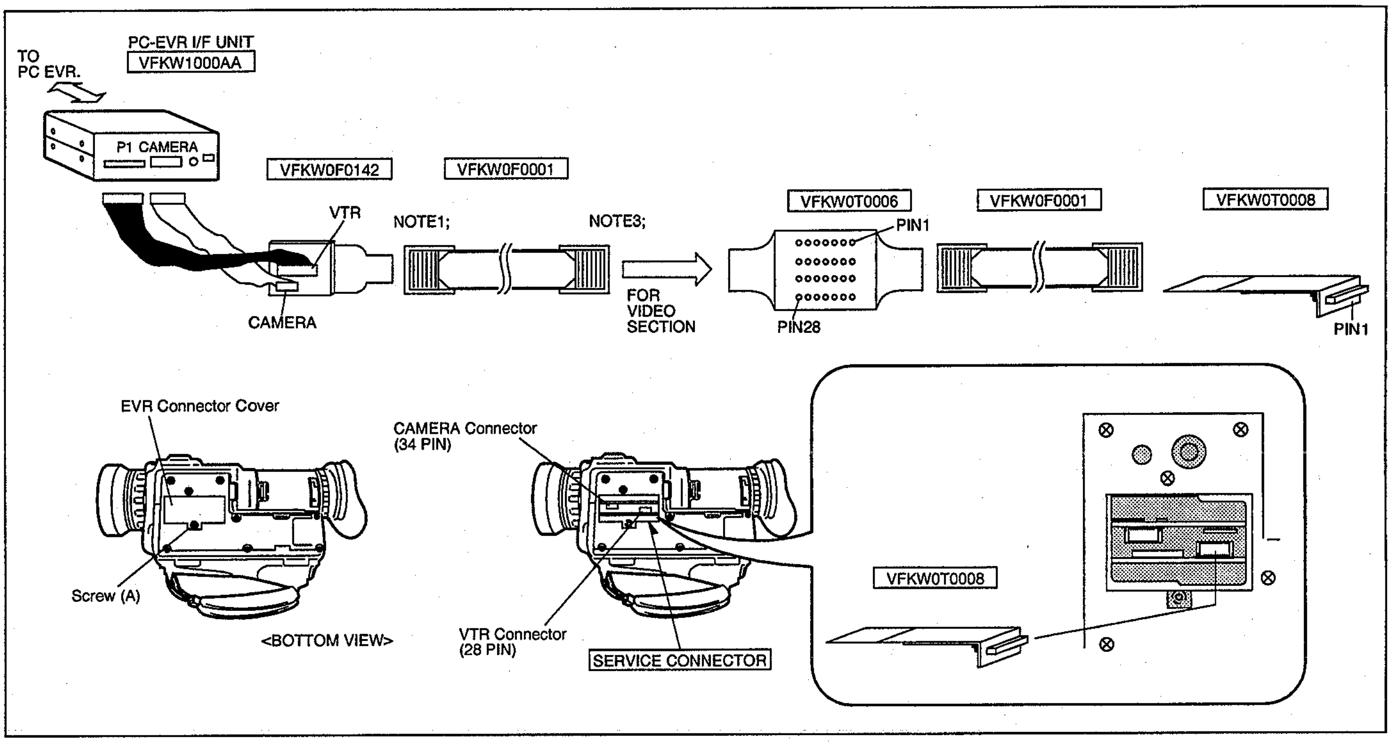

TO
PC EVR.
PC-EVR I/F UNIT
VFKW1000AA
P1 CAMERA
VFKW0F0142
VFKW0F0001
VTR
CAMERA
NOTE1;
NOTE3;
FOR
VIDEO
SECTION
VFKW0T0006
PIN1
PIN28
VFKW0F0001
VFKW0T0008
PIN1
EVR Connector Cover
Screw (A)
<BOTTOM VIEW>
CAMERA Connector
(34 PIN)
VTR Connector
(28 PIN)
SERVICE CONNECTOR
VFKW0T0008

Fig. A17

2. Connect the oscilloscope to VTP1 (Envelope) and VTP2 (GND) on the SUB I/F Board (VFKW0T0006) and confirm that the envelope output is within following specification. Use VTP14 (HID) as a trigger.

V1/V max. 0.9
V2/V max. 0.9
V3/V max. 0.9

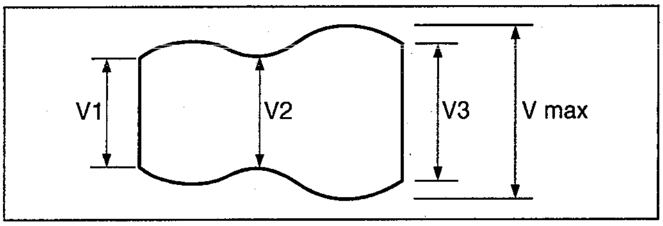

V1
V2
V3
V max

Fig. A18

3. If the level of the envelope signal is out of specification, readjust the Tension Post & T3 Post Height Adjustment.

<When adjusting the envelope signal within unit.>

1. Open the Cassette Door.
2. Unscrew screw (H) and release the Cassette Door Arm.

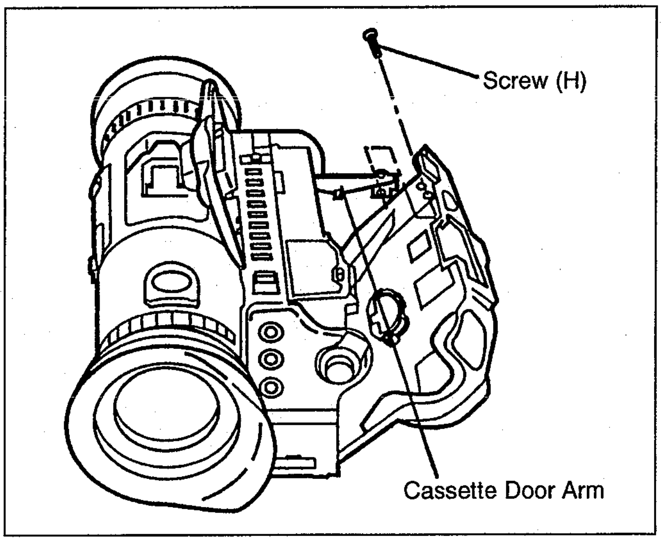

Screw (H)
Cassette Door Arm

Fig. A19

3. Unscrew 2 screws (I) and remove the Cassette Cover Open/Close Detect Switch C.B.A. to inhibit the detection of the cassette door open.

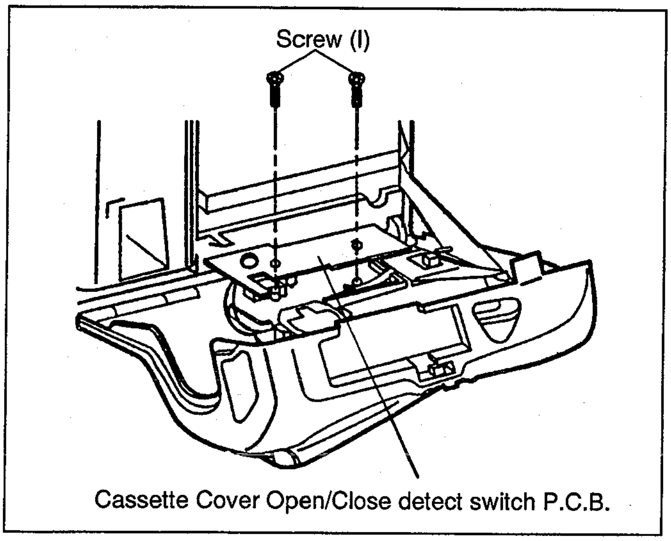

Screw (I)
Cassette Cover Open/Close detect switch P.C.B.

Fig. A20

4. Adjust the envelope signal by connecting the oscilloscope with "Tatsujin Kit" as shown in Fig. A17.

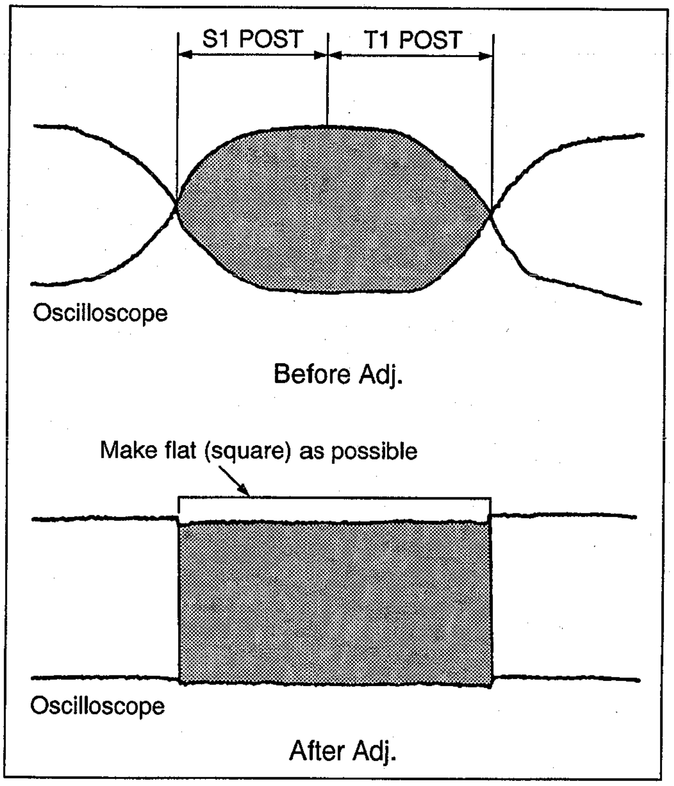

S1 POST
T1 POST
Oscilloscope
Before Adj.
Make flat (square) as possible
Oscilloscope
After Adj.

Fig. A21

6. Final Adjustment with BER Counter and "Tatsujin Kit".
   RF Adjustment
   Tp : VTP23 (SBE)
   Mode : PLAY
   Tape : Alignment Tape (Colour Bar)
   M.Eq. : Oscilloscope, B.E.R. Counter
   Spec. : B.E.R. counter number less than 200 on removed Mechanism unit.
   Confirm that the B.E.R. counter number less than 50 in the fully assembled condition.

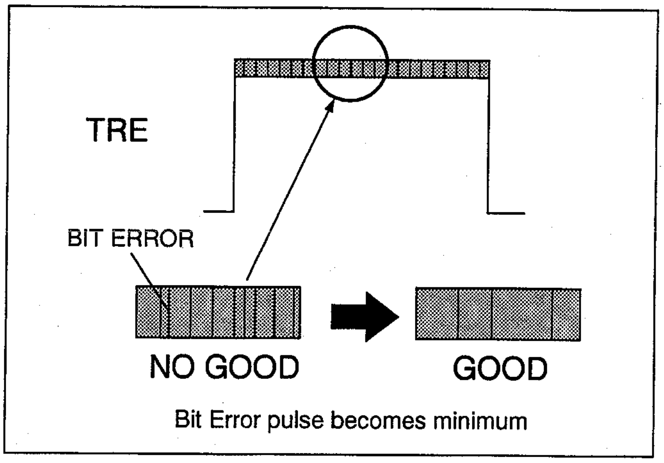

TRE
BIT ERROR
NO GOOD
GOOD
Bit Error pulse becomes minimum

Fig. A22

<Preparation>

Supply DC power supply (6V to 12V) to B.E.R. (Bit Error Rate) Counter.
Connect B.E.R. Counter (VFK1234) with B.E.R. Counter Cable (VFK1263) to following TP on PC-EVR I/F Board.

Sub I/F Board	BER Counter
Pin 9 [D. GND]	⇒ Black Clip
Pin 22 [CLK18]	⇒ Blue Clip
Pin 23 [SBE]	⇒ White Clip
Pin 24 [HID]	⇒ Red Clip

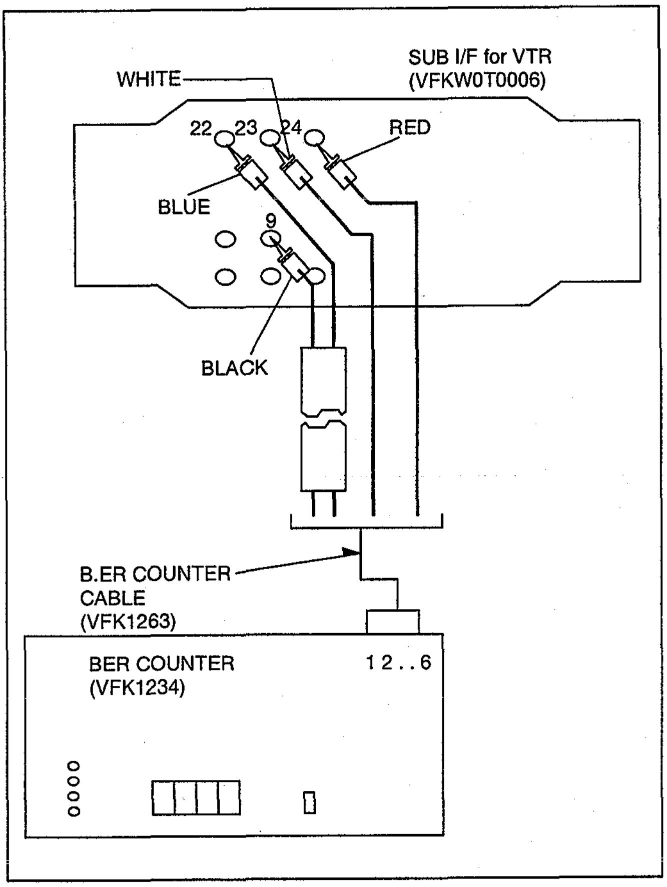
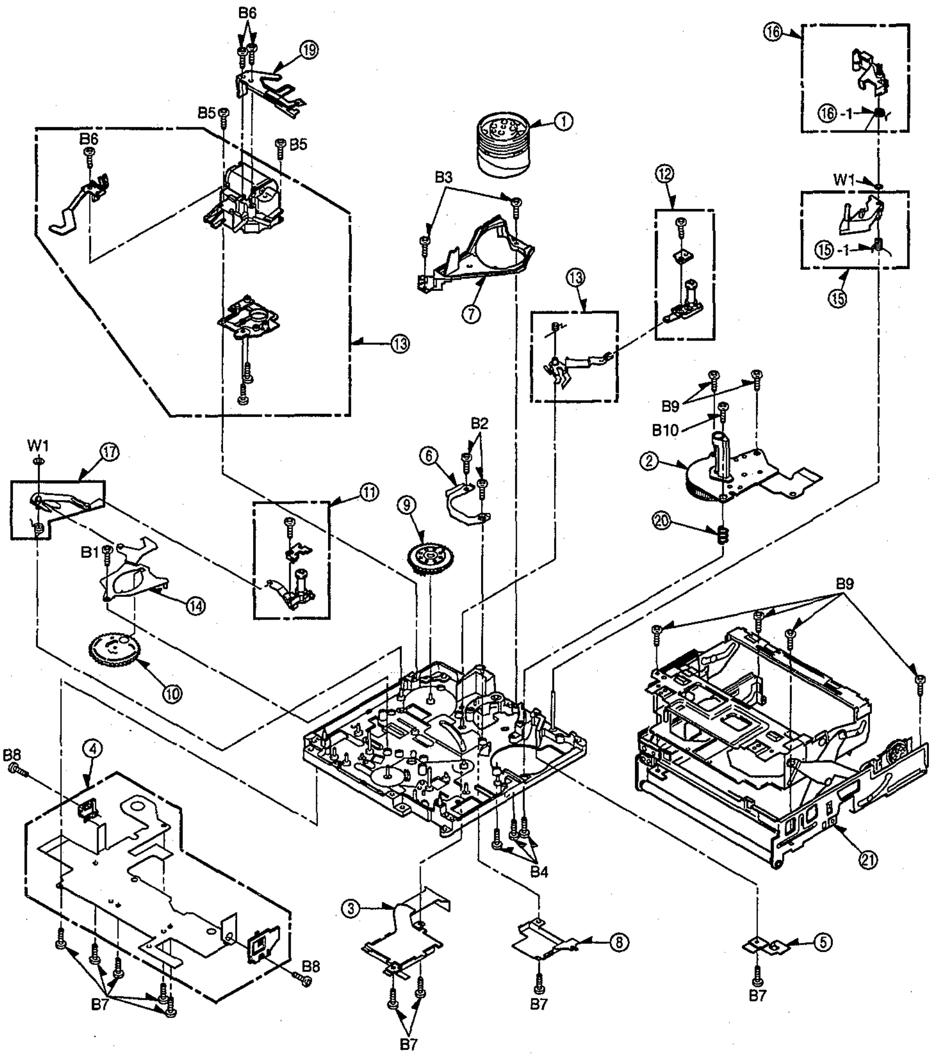

SUB I/F for VTR
(VFKW0T0006)
WHITE
22
23
24
RED
BLUE
9
BLACK
B.ER COUNTER
CABLE
(VFK1263)
BER COUNTER
(VFK1234)
1 2 . . 6

Fig. A23

Confirm Bit Error Rate count becomes less than 50 in the assembly conditon or less than 200 in the disassembly (Mechanism) condition for each head with B.E.R. Counter.
If not, repeat 5 point adjustments (DL, ERR DL, COMP LEV, CLK PHASE, ALPHA) again.
When the Sync Error happen, Bit Error Rate becomes less than 50 or 200. However, since this is not correct, please re-adjust it.

4. Exploded Views & Parts List

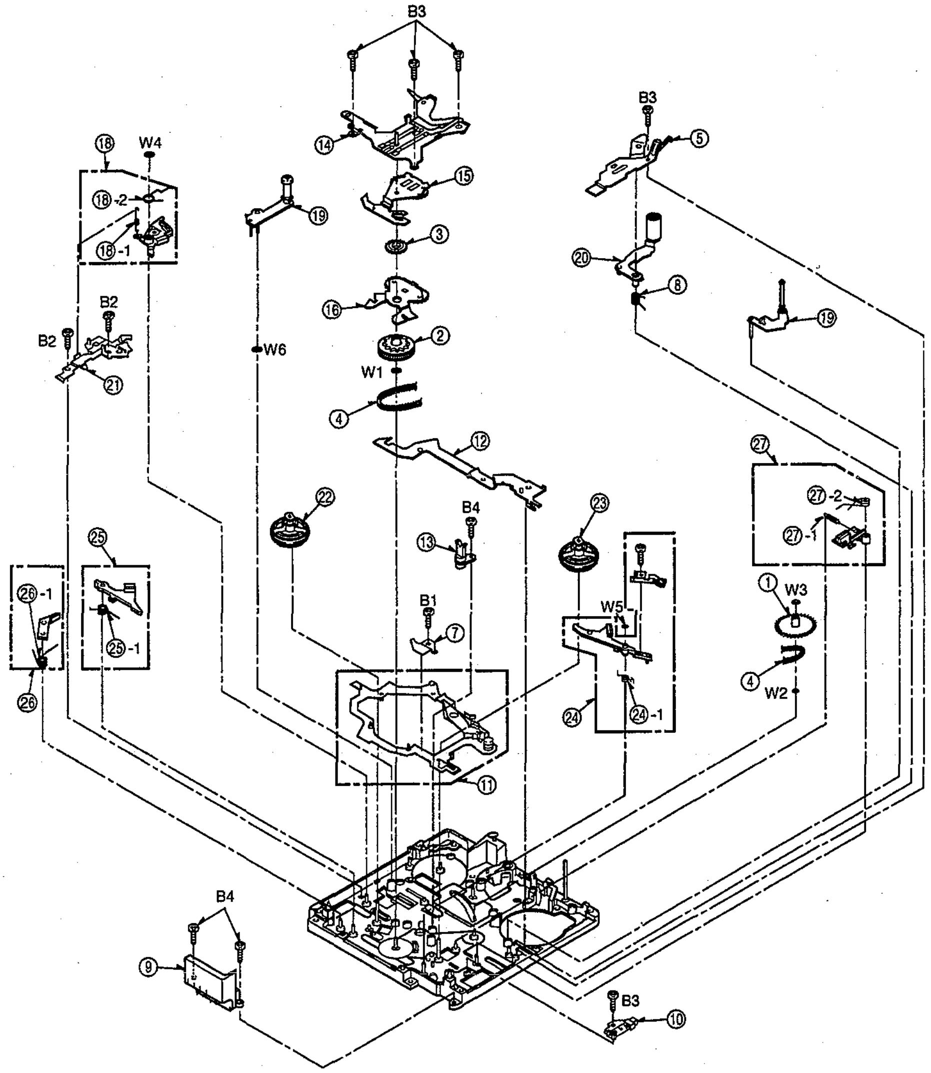
❶ VCR Mechanism 1 Section



Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1	(1)	VEG1217	CYLINDER UNIT	1	For NV-DX1
1	(1)	VEG1438	CYLINDER UNIT	1	For NV-DS1, DS5
2	(1)	VEM0624	CAPSTAN MOTOR UNIT	1	
3	(1)	VEP05224A	HEAD AMP C.B.A.	1	For NV-DX1
3	(1)	VEP05352A	HEAD AMP C.B.A.	1	For NV-DS1, DS5
3-∗	(1)	VSC4214	HEAD AMP SHIELD CASE	1	For NV-DX1
3-∗	(1)	VSC4639	HEAD AMP SHIELD CASE	1	For NV-DS1, DS5
4	(1)	VES0711	FLEXIBLE CABLE	1	For NV-DX1
4	(1)	VES0856	FLEXIBLE CABLE	1	For NV-DS1, DS5
5	(1)	VMA9176	CAPSTAN COVER	1	For NV-DX1
5	(1)	VMA9708	CAPSTAN COVER	1	For NV-DS1, DS5
6	(1)	VMA9179	RADON PLATE	1	
7	(1)	VMD2373	RAIL	1	
8	(1)	VSC4215	SHIELD CASE	1	For NV-DX1
8	(1)	VSC4640	SHIELD CASE	1	For NV-DS1, DS5
9	(1)	VSR0114	MODE SW	1	
10	(1)	VXA5407	CAM GEAR	1	
11	(1)	VXA5409	S BOAT UNIT	1	
12	(1)	VXA5410	T BOAT UNIT	1	
13	(1)	VXA5417	GEAR BOX (LOADING MOTOR)	1	
14	(1)	VXA5612	RADON COVER UNIT	1	
15	(1)	VXL2461	T2 ARM UNIT	1	
15-1	(1)	VMB2789	T2 ARM SPRING	1	
16	(1)	VXL2468	CLEANING ARM UNIT	1	
16-1	(1)	VMB2791	CLEANING ARM SPRING	1	
17	(1)	VXL2470	S1 ARM UNIT	1	
18	(1)	VXL2471	T1 ARM UNIT	1	
19	(1)	VMA9753	BRUSH ARM STOPPER	1	
20	(1)	VMB2777	CAPSTAN ADJ. SPRING	1	
21	(1)	VXA5387	GARAGE UNIT	1	
B1	(1)	VHD0878	SCREW	1	
B2	(1)	VHD0989	SCREW	2	
B3	(1)	XQN14+B4	SCREW	2	
B4	(1)	VXQ0439	SCREW	3	
B5	(1)	XQN14+B35	SCREW	2	
B6	(1)	XQN14+BQ4	SCREW	1	
B7	(1)	XQN14+B15	SCREW	9	
B8	(1)	XQN14+B2	SCREW	2	
B9	(1)	VHD0882	SCERW	6	
B10	(1)	XQN14+B4FZ	SCREW	1	
W51	(1)	VMX2027	WASHER	2	

❷ VCR Mechanism 2 Section



Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1	(2)	VDG1030	DRIVE PULLEY	1	
2	(2)	VDG1031	CENTER PULLEY	1	
3	(2)	VDG1032	CENTER GEAR	1	
4	(2)	VDV0265	TIMING BELT	1	
5	(2)	VMA9178	PINCH PRESSURE PLATE	1	
7	(2)	VMA9181	BRAKE ROD SUPPORT (T)	1	
8	(2)	VMB2776	SPRING	1	
9	(2)	VSH0067	MIC SWITCH	1	
10	(2)	VSJ0114	SOLENOID	1	
11	(2)	VXA5401	BRAKE ROD UNIT	1	
12	(2)	VXA5408	T3 ROD UNIT	1	
13	(2)	VXA5411	LED HOLDER UNIT	1	
14	(2)	VXA5412	COVER PLATE UNIT	1	
15	(2)	VXL2454	P IDLER ARM UNIT	1	
16	(2)	VXL2455	FR IDLER ARM UNIT	1	
17	(2)	VXL2456	TENSION ARM UNIT	1	
18	(2)	VXL2732	PAD ARM UNIT	1	
18-1	(2)	VMB2788	TENSION SPRING	1	
18-2	(2)	VMB2787	PAD ARM SPRING	1	
19	(2)	VXL2462	T3 ARM UNIT	1	
20	(2)	VXL2464	PINCH ARM UNIT	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
21	(2)	VXL2466	EJECT ARM UNIT	1	
22	(2)	VXR0347	SUPPLY REEL TABLE	1	
23	(2)	VXR0348	TAKE UP REEL TABLE	1	
24	(2)	VXZ0319	TAKE UP MAIN BRAKE	1	
24-1	(2)	VMB2782	T MAIN BRAKE SPRING	1	
25	(2)	VXZ0321	SUPPLY MAIN BRAKE	1	
25-1	(2)	VMB2783	S MAIN BRAKE SPRING	1	
26	(2)	VXZ0322	FF BRAKE UNIT	1	
26-1	(2)	VMB2784	FF BRAKE SPRING	1	
27	(2)	VXZ0323	REV BRAKE UNIT	1	
27-1	(2)	VMB2786	REV SPRING	1	
27-2	(2)	VMB2785	REV BRAKE SPRING	1	
B1	(2)	VHD0882	SCREW	1	
B2	(2)	XQN14+B15	SCREW	2	
B3	(2)	VHD0883	SCREW	5	
B4	(2)	XQN14+B35	SCREW	3	
W1	(2)	VMX2503	WASHER	1	
W2	(2)	VMX2400	WASHER	1	
W3	(2)	VMX2504	WASHER	1	
W4	(2)	VMX2027	WASHER	3	
W5	(2)	VMX2028	WASHER	1	
W6	(2)	VMX2394	WASHER	1	

Memo

Order No. VMD9708033S8

Service Manual

Supplement

Video Product

Effective from : Running Change

Subject : Correction of Service Manual for DJ-Mechanism Chassis

Please use this service manual together with the Service Manual for Order No. VMD9706005A8
Model No. DJ-Mechanism Chassis.

Please correct the Service Manual as follows.

Mistake

(Page 8)

3. Mechanical Adjustment Procedure

3-1. Test Equipment and Tools

4. VFM3010EDS Alignment Tape

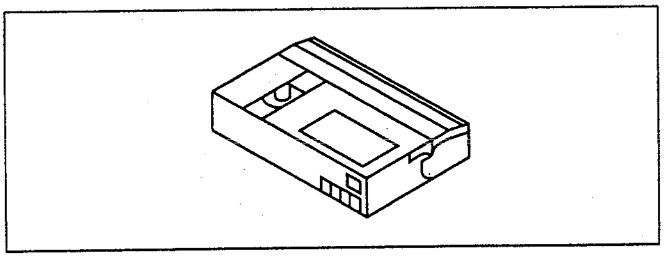


Fig. A3 For B.E.R. Adjustment

Correct

(Page 8)

3. Mechanical Adjustment Procedure

3-1. Test Equipment and Tools

4. VFM3010EDS Alignment Tape (NTSC)
VFM3110EDS Alignment Tape (PAL)

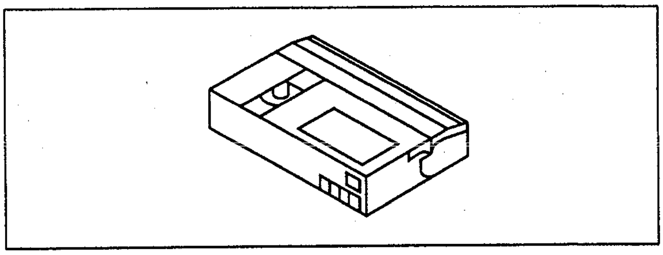


Fig. A3 For B.E.R. Adjustment

⚠WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1997 Matsushita Electric Industrial Co., Ltd.
All rights reserved. Unauthorized copying and distribution is a violation of law.